



## Technical Assistance Consultant's Report

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Project Number: TA-8194 THA

March 2014

### Kingdom of Thailand: Accounting and Financial Management System Reform of Thailand's Railway Sector

## Final report

Prepared by:

Corporate Solutions Consulting Ltd, UK

For:

Ministry of Finance, Thailand

Ministry of Transport, Thailand

State Railways of Thailand

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Asian Development Bank

Title

## FINAL REPORT

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The authors welcome further discussion of issues raised in this report.

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# PROJECT CHARTER

## Project Title:

Accounting and Financial Management System Reform of Thailand's Railway Sector ( TA-8194 THA)

**Overall goal:** To support SRT with developing and improving its financial management and reporting practices.

## Overview and scope:

The overall objective of the project is to assist SRT with improving its financial management and reporting systems. The main outcome of the project is the development of a specification for a Financial Management Information System detailing the SRT management, accounting, and financial information system needs to support the rail system improvement objectives of the government.

Specific activities of the project includes:

- Review of the existing organization and financial management and reporting practices
- Recommendation for changes for improvements within SRT's regulatory and policy framework.
- Developing specification for FMIS and preparation of tender document for the purchase of the systems required.
- Developing an implementation plan for FMIS.

The project will liaise with SRT's main stakeholders including the Ministries of Finance and Transport to understand their vision for the future development of SRT and the Stakeholders information needs.

The project team will work closely with the senior management of SRT to identify their information needs for management of their operations and identify the nature of financial and management information needs.

The above will be achieved through a series of workshops the purpose of which would be partly to obtain information from the management and stakeholders and partly as a method skills transfer through discussion and presentation of how railways operations are managed elsewhere and the identification of management practices that could be effective and relevant to the situation in Thailand.

The above combined with understanding of the companies requirements for financial management and reporting will enable the Consultant to finalise a specification for the FMIS and tender documents.

## Deliverables:

- Inception Report
- SRT Report
- Interim Report
- Financial Report
- FMIS Specification
- Tender Documents
- Communication Plan
- Final Report

## Beneficiary:

State Railways of Thailand (SRT)  
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Bangkok 10330

## Consultant:

Corporate Solutions Consulting Limited

## Source of project funding:

The Asian Development Bank

**Project Start Date:** March 2013

**Project End Date:** March 2014

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## ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
BB	Bureau of the Budget
CMMS	Computerised Maintenance Management System
DRC	Disaster Recovery Centre
EA	Executing Agency (Ministry of Finance)
ERP	Enterprise Resource Planning
FMIS	Financial Management Information System
GAAP	Generally Accepted Accounting Principles
GOT	Government of Thailand
HRM	Human Resource Management
IA	Implementing Agency (State Railways of Thailand)
IAS / IFRS	International Accounting Standards / International Financial Reporting Standards
ICT / IT	Information Communication Technology /Information Technology
LAN	Local Area Network
MOF	Ministry of Finance
MOT	Ministry of Transport
PSO	Public Service Obligation
RDBMS	Relational Database Management System
SBU	Strategic Business Units
SRT	State Railways of Thailand
UPS	Uninterruptible Power Supply
WAN	Wide Area Network

## 1.1 THIS REPORT

1. This is the final report for the project Accounting and Financial Management System reform for the State Railway of Thailand (SRT). It brings together and summarises work undertaken to date into one report. To this end this report includes material from previous reports – albeit updated and re-arranged as appropriate. It is the sixth report for the project and provides the underlying concepts, logic and methodology that underpin the technical design of the FMIS. The report is accompanied by a Specification Report, bidding documents and Communications Plan. An Implementation Plan that can be used by SRT to progress the project is included as Appendix A.

## 1.2 OBJECTIVES

2. The objective of the Government of Thailand (GoT) is for rail transport to play a greater part in Thailand's future. To achieve this, SRT needs to improve its financial management and operational efficiency. This project will strengthen SRT's accounting and financial management information system to underpin on-going improvements to SRT's institutional structure and operations.
3. SRT's current accounting system, as well as being old and difficult to maintain, is focused on meeting statutory accounting requirements. What SRT needs is an accounting system that provides management with the financial information it needs to manage. This information needs to be both timely and relevant.
4. The primary objective was thus to improve planning and decision making by providing relevant and timely management information to SRT's managers.

## 1.3 PROJECT HISTORY

5. The Government of Thailand (GoT) pledged TBH 176 billion of investment<sup>1</sup> in the railway sector and has shown strong commitment to the improvement of the railways. However it acknowledges that investment in infrastructure alone would not achieve its objectives. A report prepared<sup>2</sup> for ADB on the future role of railways in Thailand concluded that SRT is not viable as an organization under the current conditions and that without aggressive and sustained support and restructuring, the Thailand railway system is likely to become irrelevant within 10 years.
6. Both GoT and ADB recognise the need for considerable strengthening of organisation, operations and management practices. This project is aimed towards addressing these issues and improving State Railways of Thailand (SRT)'s financial performance. In particular, the Consultant was required to provide advisory services to the Government and SRT to strengthen its accounting and financial management information system that would underpin the on-going improvements to SRT's institutional structure and operations. The following key outputs were required: (i) specification of a new management, accounting, and financial information system for SRT to meet its projected information requirements; and (ii) an implementation plan, with detailed bidding documents to deliver the transition of SRT's operations and finances to the new information system, defining key activities, timetable, expected costs, and sources of finance.
7. There have been a number of previous studies and interventions for SRT financial and accounting management systems. The Consultant was provided with a copy of the very comprehensive Deloitte study of SRT's financial and management accounting requirements. Thammasat University has also submitted a proposal to supply and implement core accounting software to support financial reporting in SRT. Both these studies were carefully considered in developing the Consultant's proposals.

<sup>1</sup> This has now been incorporated into the 2 Trillion Baht program.

<sup>2</sup> TA-8078 THA: Supporting Railway Sector Reform. ADB Manila, 2012

## 1.4 METHODOLOGY

### 1.4.1 Tasks performed

8. The methodology followed the tasks set out in the Terms of Reference (TOR) in a generally sequential manner through assessment, design and specification phases. The TOR required the production of reports at regular intervals during the course of the study. The reports are listed in Table 1 and are discussed in this section.

Report	Description	Delivered
Inception Report	A preliminary assessment of SRT undertaken by the Consultant, with a particular emphasis on understanding management and accounting processes. The report also covered project logistics.	20 May
SRT Report.	A diagnostic report providing a basic analysis of the current position in three main areas: i) SRT Objectives; ii) SRT operational and organizational structure; and iii) Management including budgeting, accounting, financial management and reporting.	08 July
Stakeholder Report	A review of internal and external stakeholder reporting needs including an initial draft reporting package for discussion with managers.	29 July
Interim Report	A progress report summarising the achievement of the project. It also presented methodology by which key components such as asset valuation, intra-company pricing, access pricing and PSO calculations would be undertaken.	16 August
Financial report	This report represents the conclusions of the design phase. The report identified what the proposed financial and management system will need to provide including the chart of account and key performance indicators.	10 October
FMIS Specification Report	The system specification specifying the proposed FMIS prepared as a basis for calling for bids from suppliers	Accompanies this report
FMIS Bidding Documents	Documents required for system procurement	Accompanies this report
Communication Plan	A strategy and approach to communicating the ongoing project both internally within SRT and with external stakeholders and wider public.	Accompanies this report
Draft Final and Final Report	Summarises the achievements and recommendations of the project. This report is to be submitted for comments to ADB and SRT and will later be finalised by the Consultant.	This report

**Table 1. Reports Prepared under the Project**

9. All stages of the project were discussed extensively with SRT officers through workshops at which the Consultant proposals were presented and feedback and discussion was encouraged. Table 2 lists the workshops held.

Date	Audience	Topics
7 June 2013	Governor and Senior Staff	Findings set out in the SRT report
19 June 2013	Deputy Governors	Reporting requirements
10 July 2013	External Stakeholders	Reporting requirements
23 August 2013	Governor, ADB	Tri-partite meeting, project review
7 October 2013	Senior Staff	Financial Report
6 December 2013	Senior Staff	Draft final report

Table 2. Workshops and presentations

10. The project commenced in late March when the Project Director/Information System Specialist and the Team Leader/Rail Transport Specialist visited SRT to conduct an initial series of meetings with key SRT officers. The focus of the meetings was to gain initial understanding of the SRT organisation and business practices and in particular on the accounting section and financial management of the company. These meetings were followed up with a number of meetings with SRT staff from various divisions. A preliminary assessment of SRT was undertaken by the Consultant, with a particular emphasis on understanding management and accounting processes. This work was reported in the Inception Report. The report also covered project logistics.
11. The Inception Report was followed by a diagnostic phase where the Consultant undertook a basic analysis of the current position in three main areas: i) SRT Objectives covering the policy, legal and regulatory framework, GOT support to the rail sector and the GOT's strategic and policy direction; ii) SRT operational and organizational structure; and iii) Management including budgeting, accounting, financial management and reporting. An analysis was undertaken of SRT's current performance. This phase was reported in the SRT Report.
12. Meetings with Deputy Governors and Business Unit heads were held to identify their reporting needs. External stakeholders were also consulted. These discussions were reported in the Stakeholder Report which also included an initial draft reporting package for discussion with managers. These reports were subsequently discussed at a series of business unit level meetings run by the local consultants in Thai language to obtain comments and proposals.
13. The proposals arising out of the design stage were presented in the Interim Report and the Financial Report. These reports define the methodology by which key components such as asset valuation, transfer pricing, access pricing and PSO calculations will be undertaken and identify what the proposed financial and management system will need to provide including the coding structure and key performance indicators.
14. Training was provided to SRT staff. Two courses were run; an Effective Finance Function course was run for Finance and Accounting Division staff and a Finance for Non-Financial Managers course for managers from other business units. Most of the Deputy Governors attended the Non-Financial Managers course. A total of 147 staff received training which included course material based on the proposed reporting package and the Interim Report recommendations. Seventy five percent of the participants said they already had some familiarity with the topics but all said that the courses contributed to their knowledge with over 20% saying the courses contributed greatly to their knowledge.
15. The concepts developed in the Interim and Financial reports have been used to develop the FMIS Specification Report which, in conjunction with the Bidding Document is designed to enable SRT to proceed to the next stage of the project. The Consultant has prepared an Implementation Plan to assist SRT in this process. The plan is included as Appendix A to this report. The Consultant has also prepared a Communications Plan.
16. This Final Report brings together all the work on the project. As has been the case with all reports, the final report, specification report and implementation strategy are being presented to SRT in workshops to allow for discussion and feedback before they are finalised.

### 1.4.2 Issues and Challenges

17. The main issue that needed to be addressed by the Consultant was the absence of any form of management accounting or reporting in SRT. The current financial systems, and the work of the Finance and Accounting Division, are focussed on the preparation of statutory reports. Thus while replacing the existing obsolete and labour intensive accounting system is generally accepted as a matter of priority, the Consultant concluded that simply replacing it on a like-for-like basis would not address the real needs of SRT. The Consultant therefore worked closely with Finance and Accounting Division and senior managers to introduce the concept of management information and reporting.
18. The management structure of SRT is based round functions and inputs rather than products and outputs. The Consultant believes that to be able to measure performance, SRT must be able to manage the costs and revenues of its principal outputs together. This was discussed with senior management and it was agreed that management reporting should focus on outputs. Proposals to restructure SRT were made in an earlier ADB report<sup>3</sup> but while accepting much of the logic behind the ADB report, there appears to have been a reluctance by SRT and GoT to implement the structural reforms proposed. This created a challenge for the FMIS project as it would be normal for a change in management focus of the scale envisaged to be accompanied by significant restructuring of the organisation.
19. The proposed FMIS reporting system is designed to report the performance of final and intermediate outputs. It has been designed to be consistent with the current organisation structure, but would accommodate a change to a business segment based structure in the future.
20. Railways present a particular challenge in attributing costs to outputs. The resources used in operating a train service can be used on many different services over the course of a month – costs are generally incurred at a location (a depot or a station) but can relate to activities that span over many locations. The Consultant developed a transfer pricing system (or access pricing in the case of infrastructure) based on the concept of work orders and train orders to address this issue. Transfer pricing can be controversial and the Consultant went to considerable lengths to ensure that the concept and the reasons for it were understood by Management and staff.
21. Public Service Obligations are a large part of the services SRT operates. The FMIS should help SRT negotiate more realistic payments for services mandated by Government. An issue that was raised was investment by SRT that is justified on economic grounds but which is not a financial proposition for SRT. This is likely to be often the case where the economic benefits are primarily consumer surplus resulting from a reduction in costs for the passenger. The Consultant proposes that in this case, funding needs to be agreed in advance on a per-passenger or per passenger-kilometre basis such that SRT can expect a reasonable financial return.
22. While in general the Consultant worked on the presumption that there would be no reorganisation of SRT, an exception was made in the case of the Finance and Accounting Department itself. This Department needs to be reorganised to provide the management accounting and reporting functions that underpin the FMIS. Proposals for a new structure were developed and discussed with Finance and Accounting managers and staff at a series of workshops and training sessions. SRT may also wish to consider reorganisation within the Traffic Business unit. This is currently organised on traditional lines with a commercial branch and an operating (traffic) branch. A division along product lines may be preferable once the FMIS reporting is available.

### 1.5 STRUCTURE OF THIS REPORT

23. The remainder of this report presents the main analysis and findings of the project. Chapter 2, SRT Objectives and Policy Framework is the initial diagnostic work. Chapter 3, Reporting Requirements identifies the needs of SRT managers and stakeholders based on discussions

<sup>3</sup> Ibid

within and external to SRT and on the Consultant's own experience. Chapter 4 Requirements for an FMIS then identifies what is required for the FMIS to be effective. Chapter 5 Organisational Requirements considers organisational changes to put the FMIS and management reporting into effect, while Chapter 6 covers SRT's needs for additional technical assistance and support during the procurement and implementation stages, including a programme of training in finance and accounting. Chapter 7 summarises the steps required for implementation.

24. Each chapter ends with a conclusions section summarising the activity and a section recording the consultation that took place.
25. This Final Report presents only a summary of our findings and suggestions. Details of our work are presented in other project reports which should be read to develop a deeper understanding of the issues and our detailed proposals for the changes needed in SRT and the design and the specification of FMIS.

## 2.1 POLICY AND REGULATORY FRAMEWORK

### 2.1.1 The Transport Sector and the Role of Railways

26. With the People's Republic of China and Lao PDR to the North, Viet Nam and Cambodia to the East, Myanmar to the West and Malaysia and Singapore to the South, Thailand sits at the hub of northern South East Asia. As the economy of Thailand develops and the economies of its neighbours continue to expand, trade is expected to increase dramatically. Thailand has the potential to connect the entire region and beyond creating opportunities for and threats to its transport system. To realize the benefits from this potential, Thailand will need an integrated – multifaceted transport system that can respond quickly to the demands of the developing economies of the region.
27. Heavy investment in road assets in Thailand over the past 30 years with no comparable investment in rail has left State Railways of Thailand (SRT) in a very uncompetitive position, with limited rail inter-regional interconnectivity, high logistics costs, poor service to key shippers, and poor track and equipment condition. Traffic on SRT is dominated by loss making third class trains, limiting access for other services. Current Government policy is for these services to be provided to the public free of charge. Even so, patronage is declining. Freight operations are not considered a priority and shippers are often disappointed by service from SRT, which lacks suitable locomotives and rolling stock and other equipment to carry the traffic. As a result freight traffic has been slowly lost to the competing road carriers.
28. Track condition is a recurring problem and affects operational efficiency and safety. More than 67% of the rails have been in use for more than 30 years and derailments are frequent. Only 133 of SRT's diesel locomotive fleet of 209 (64%) are available for service.<sup>4</sup>

### 2.1.2 Government of Thailand strategic and policy direction

29. The Government of Thailand (GoT) hopes to make rail a competitive transport mode, with the aim of increasing the market share of rail freight transport from 2% in 2010 to 8% by 2020. To achieve this, SRT needs to improve its financial management and operational efficiency and thus its financial performance.
30. An integrated and balanced transport system would contribute to both economic growth and social development. Moving by road traffic that railways are best placed to handle inevitably results in higher road infrastructure costs, increased traffic congestion, greater vehicle emissions and more traffic accidents.<sup>5</sup> Major projects that are planned or are being implemented include investment in high speed railways for long distance passenger travel and construction of elevated commuter lines in Bangkok.
31. If SRT is to make the contribution to the railway sector envisioned by the Government it needs to be able to show it is well managed, and it needs to have the financial strength to provide borrowers with the confidence that interest will be paid and bonds honoured. SRT's current financial performance has resulted in a weak financial structure which, if there are no changes, is likely to make it difficult for SRT to continue to operate and to deliver any substantial future program of capital projects.

### 2.1.3 Policy, legal and regulatory framework

32. SRT is established under the authority of the State Railway of Thailand Act B.E. 2494 (1951) (the Railway Act)<sup>6</sup>. It is the sole operator of railway services in Thailand outside Bangkok.<sup>7</sup> The

<sup>4</sup> Data Collection Survey on Basic Information of Railway Sector. JICA Tokyo. August. 2010

<sup>5</sup> Developed from "Governance and structure of the railway industry: three pillars, Amos and Bullock, World Bank Office, Beijing, December 2011.

<sup>6</sup> It is also subject to the 1921 Law on Transportation of Passengers and Goods where these laws do not conflict

organization was originally founded as the Royal State Railways of Siam in 1895 by King Chulalongkorn. The network comprises four main corridors that radiate from Bangkok to the north, north-east, east, and the south, together with a number of small branch lines. A short physically isolated track section links Bangkok to Mae Klong to the South West. Altogether there are 4,043 route km, of which 3,684 km are single track, 252 km double track and 107 km triple track. The network serves 47 of the country's 77 provinces, and has the potential to be a strong backbone for land transport.

33. SRT is headed by a Governor who reports to a board (Board of Commissioners) who report to the Ministry of Transport (MOT). The Board is responsible for the formulation of SRT's policies and general supervision of SRT's activities, and consists of a chairman and four to six other members appointed by Cabinet. The Governor acts as de facto Chief Executive of SRT, and is an ex-officio member of the Board.
34. SRT is subject to budgetary control by Ministry of Transport (MOT), the Ministry of Finance (MOF), Office of the National Economic and Social Development Board (NESDB), and the Bureau of the Budget (BB). Thus the four main government agency stakeholders are MOT, MOF, NESDB and BB. There is also a trade union, which provides representation for staff. There is no strong association of shippers or of passengers that act as stakeholder on behalf of customers.
35. SRT acts as a department of GoT, and GoT has significant influence on almost all aspects of SRT's business and finances. SRT tariffs for both freight and passengers require Cabinet approval. Although SRT has proposed increases, the last tariff increase for freight was in 2003 and for passenger (first and second class only) in 1996. Third class passenger rates have not increased since 1985. SRT's third class fare to travel 200 km is less than the fare on the Bangkok Skytrain<sup>7</sup>. Travel on certain third class trains is currently provided free under an agreement with GoT to keep down the cost of living. SRT is also required to provide discounts on fares to certain classes of individuals, such as Members of Parliament and certain classes of government officials (and to SRT's own staff).
36. SRT is also subject to GoT direction in terms of its employment policies. SRT has approximately 10,000 full time salaried employees and 4,000 one-year contract employees (contracts are renewed yearly as required) who are paid a daily rate with benefits. Salary levels are set by GoT. Staff levels have been reduced substantially in recent years, from 20,000 to the current 10,000. This has been achieved mainly by stopping recruitment and by natural wastage (resignations and retirements). There are GoT mandated ceilings on staffing levels in individual departments, but there have not been any compulsory redundancy programs. Some recruitment is now being allowed, at 5% of the total number of staff that retire in a particular year, and Cabinet has approved the recruitment of 2,438 new full time employees within three years.
37. SRT is self-regulating in regard to railway operations and safety, although it is understood that this is being reviewed in the context of proposals to open access to third party operators.

#### 2.1.4 Accounting and audit framework and relevant regulations

38. SRT is required to prepare its financial statements in accordance with Thai Accounting Standards (TAS). TAS are mostly translations or adaptations of the International Accounting Standards (IAS), the International Financial Reporting Standards (IFRS) and the United States

<sup>7</sup> Rail-based mass rapid transit (MRT) services in Bangkok are operated by the Bangkok Mass Transit System Public Company Limited (i.e., the Skytrain) and Bangkok Metro Company (i.e., the blue line subway).

<sup>8</sup> Supplementary charges apply for express and rapid services and for air conditioning and these are not regulated. Based on fares shown on tourist web sites, SRT first and second class fares are comparable with luxury and air-conditioned bus fares and are lower than normal air fares. However once train type and air conditioning supplements are included they appear to be higher than comparable bus fares. First class sleeper fares are less than standard Thai Airways fares but more than the fares charged by discount airlines such as Air Asia. Under these circumstances the scope for increases in commercial rail fares may be limited.

Generally Accepted Accounting Practice (GAAP). SRT is audited by the Office of the Auditor General of Thailand in accordance with TAS.

39. There are no separate internal accounting regulations that apply to SRT. An entity of the size and scale of SRT would typically have its own internal accounting manual. The introduction of a new accounting system would provide a good opportunity to SRT to consider developing its own Accounting Manual. The Manual would establish internal accounting regulations, covering the preparation and production of financial plans and budgets, processes and procedures for data processing and the preparation of external and internal financial and management accounts.

### 2.1.5 Financial planning and budgeting

40. Government long term financial plans (3-5 years and beyond) are produced at GoT department level. The plan for the transport sector produced by the Ministry of Transport includes railways. SRT does not itself produce longer term financial plans, but is required to produce investment plans annually approximately one year in advance. SRT produces annual budgets to a similar timetable. These include detailed income statements and a commentary, but have a limited use in financial management terms.

## 2.2 CURRENT PERFORMANCE

41. The Consultant undertook a high level review of SRT operational and financial performance. The principal sources of revenue are transportation revenue (freight and passenger) income from property, and the PSO receipts. Transportation revenue currently comprises 55% of total revenue, and this proportion has been constant over the last three years. This is supplemented by PSO income currently comprising 28% of total revenue, and this proportion has increased, but only slightly, over the last three years. Income from property management is currently 15% of total revenue, and again this has increased only marginally over the last three years.
42. Railway patronage and revenue have been relatively stable in recent years. Table 3 and Table 4 summarise the key passenger and freight data.

	passengers	passenger-km	average distance	Passenger revenue	average fare	train-km	average load
	<u>thousand</u>	<u>million</u>	<u>km</u>	<u>million</u>	<u>Baht/km</u>	<u>thousand</u>	<u>passengers</u>
1995	71,521	12,975	181	3,824	0.29	26,645	487
2007	45,050	8,038	178	4,249	0.53	27,904	288
2008	46,608	8,217	176	4,226	0.51	26,815	306
2009	47,486	8,825	186	4,382	0.50	27,302	323
2010	45,122	8,187	181	4,056	0.50	27,194	301
2011	45,833	8,032	175	4,312	0.54	27,035	297

Table 3. Key passenger data - Source SRT information booklet

43. While demand has been static the cost per passenger and per ton has been increasing and the ratio of revenue to expenditure falling. As a result SRT has been making increasingly large losses. Based on provisional results for 2010 - 2012, (Table 5) SRT is losing approximately Baht 11 billion per year. The current outstanding debt burden for SRT is approximately Baht 70 billion. This represented 35% of all public corporation debt carried by GoT in 2012<sup>9</sup>.

<sup>9</sup> Thailand Public Debt Management Office.

	tons	ton-km	average haul	freight rev	revenue/ t-km	train km	average load
	<u>thousand</u>	<u>million</u>	<u>km</u>	<u>million</u>	<u>Baht</u>	<u>thousand</u>	<u>tons</u>
1995	8,142	3,242	398	1,525	0.47	9,462	343
2007	11,880	3,161	266	2,171	0.69	7,418	426
2008	13,508	3,252	241	2,392	0.74	7,317	444
2009	11,505	2,734	238	2,053	0.75	6,536	418
2010	11,623	2,701	232	2,108	0.78	6,584	410
2011	11,076	2,562	231	1,986	0.78	6,092	421

Table 4. Key freight data - Source SRT information booklet

44. A deteriorating financial position in recent years has meant that the shortfall has had to be met by additional equity contributions and commercial bank loans. The latter are underwritten by GoT and are thus generally at low cost but the total amount owed is increasing.

Baht million for the year	2011/12	2010/11	2009/10
Revenue			
Transportation revenue	6,174.54	6,283.75	6,152.05
Income from property management	1,703.33	1,637.46	1,477.83
PSO	2,350.27	2,285.42	2,113.71
Other revenue	943.11	1,303.81	1,375.76
<b>Total revenue</b>	<b>11,171.25</b>	<b>11,510.44</b>	<b>11,119.35</b>
Operating expenses			
Infrastructure and buildings	(2,516.67)	(2,618.62)	(2,059.75)
Maintenance of locomotives and rolling stock	(3,014.29)	(2,845.53)	(2,682.79)
Transportation	(6,845.05)	(6,750.54)	(6,591.20)
Management	(1,005.10)	(782.48)	(687.14)
Other	0.73	2.38	(11.79)
<b>Total operating expenses</b>	<b>(13,380.38)</b>	<b>(12,994.79)</b>	<b>(12,032.67)</b>
<b>Loss from operations</b>	<b>(2,209.13)</b>	<b>(1,484.35)</b>	<b>(913.32)</b>
Other income	2,479.36	2,039.84	2,061.43
Other expenses			
Pensions expenses	(4,854.69)	(3,832.17)	(3,393.81)
Depreciation	(1,977.27)	(2,004.16)	(2,017.33)
Interest	(2,705.40)	(2,368.42)	(2,201.83)
Other	(1,890.51)	(1,821.66)	(1,431.99)
<b>Total other expenses</b>	<b>(11,427.87)</b>	<b>(10,026.41)</b>	<b>(9,044.96)</b>
<b>Total net loss.</b>	<b>(11,157.64)</b>	<b>(9,470.92)</b>	<b>(7,896.85)</b>

Table 5. SRT Income and Expenditure 2009-2012

Source: Unaudited financial statements and supporting accounting analysis

45. The current lack of functionality of SRT's accounting system makes it difficult for the management of SRT to identify and rectifying those operational issues which have a significant

impact on the financial performance. Examples of where insufficient functionality potentially impacts on the financial position include:

- Revenue is less than it should be because GoT mandates non-commercial fares and tariffs and may under-compensate SRT for its public service obligations (PSO). But SRT is currently unable to provide GoT with all the necessary information on which to base fare and tariff applications or PSO payments. SRT needs the ability to identify the cost of its outputs so that in discussions with the Government it can ensure that the Government agrees realistic tariffs and/or PSO payments to compensate it adequately where tariffs are not realistic.
  - Managers do not have the information required to make good decisions or recommendations. SRT is unable to determine which aspects of the business are profitable and which are loss-making and thus which services to expand, which to reduce or eliminate. Each train service represents a significant investment in equipment and operating costs. A commercially focused organization needs to make the best possible use of these resources.
46. Other factors contributing to losses include provision for historical liabilities such as loans and pensions cost.

### 2.3 GOVERNMENT SUPPORT AND PSO PAYMENTS

47. SRT is compensated for providing services required by GoT in several ways. SRT contracts (through a Memorandum of Understanding) with the State Enterprise Policy Office (SEPO) to provide 164 third class only trains each day at a reduced fare with an estimate of the applicable operating expenses less the revenue met by a Public Service Obligation (PSO) payment. The accounting system does not provide the data necessary to be sure the PSO includes a fair share of SRT costs. The cost calculation is based on depreciated rolling stock and historically inadequate maintenance with the result that SRT cannot afford replacement rolling stock or to provide adequate maintenance.
48. GoT is also required by law to provide SRT with revenue support up to 100% of total operating losses incurred, but in practice this is limited to funds available and the level of support provided has typically been less than 50%. GoT has allowed SRT to cover part of its annual losses by borrowing on the commercial capital market using a government guarantee. This has contributed to a progressively increasing debt burden, currently estimated to be in the region of \$3.22 billion (Baht 100 billion).

### 2.4 CONCLUSIONS

49. SRT's financial performance must be improved if SRT is to carry out the role envisioned by the Government of expanding freight and passenger services. The "SRT Report" identified a number of factors that contribute to the current poor performance:
- GoT mandates non-commercial fares, tariffs and activities;
  - Recompense for PSO services are inadequate;
  - Managers do not have the information required to make good decisions or recommendations;
  - Costs include provision for historical liabilities such as loans and pensions cost;
  - Operations may be inefficient due to lack of management, maintenance and investment.
50. While some of these are outside SRT management control, there are three related issues that SRT can address as part of the introduction of a financial management information system (FMIS). They are:
- The accounting system;
  - Management focus; and
  - Data handling.

### 2.4.1 The accounting system

51. The current accounting system, as well as being old and difficult to maintain, is focused on meeting statutory accounting requirements. What SRT needs but does not have is an accounting system that provides management with the financial information it needs to manage. This information needs to be both timely and relevant.
52. The existing accounting system falls short in the following areas:
  - The financial processes and systems are fragmented and data collection and recording is slow requiring multiple iterations and shifting paper.
  - The financial reports are poor, do not pass audit and take a very long time to produce.
  - SRT is unable to determine which aspects of the business are profitable and which are loss-making and thus which services to expand, which to reduce or eliminate. Each train service represents a significant investment in equipment and operating costs. A commercially focused organization needs to make the best possible use of these resources.
  - SRT is unable to provide GoT with the necessary information on which to base fare and tariff applications or PSO payments. GoT officers responsible for approving tariffs and the PSO payment have no way of knowing whether cost rises are realistic and to what extent losses stem from inefficiency.
  - SRT is unable to identify expenditure incurred in a timely manner, which hinders the management of budgets.
  - SRT's asset values are unreliable.

### 2.4.2 Management focus

53. Under the current structure, managers manage functions and inputs rather than outputs, SRT is organized around functions (Civil Engineering, Mechanical Engineering, and Traffic) and managers manage their inputs (labour, materials, etc.).
54. SRT as an organisation will be judged not on its inputs but on its performance in producing the services the public uses (ie outputs). SRT management needs to be able to track the performance of SRT's final outputs – these being PSO funded passenger services, commercial passenger services, freight services and property management. The key to successful management is to be able to relate the revenue for each output to its cost of production.
55. If SRT wishes to move towards a more commercial approach to its operations, this will require SRT, as a minimum:
  - To be able to make decisions about how best to utilise its resources, both in terms of freight and passenger operations, individual railway lines (Southern, Northern, North Eastern and Eastern), and potentially individual trains on each line.
  - To be able to determine the relative profitability of each of these services.
  - To be able to attribute or allocate revenue and expenses at the appropriate level.

### 2.4.3 Data Handling

56. SRT needs an integrated information system.
57. Data should be captured
  - once,
  - as close as possible to the activity it measures, and
  - shared across all system modules.

## 2.5 CONSULTATION

58. The findings of the “SRT Report” (summarised above) were presented to the Governor and Deputy Governors on 7 June 2013 prior to finalisation of that report. The Consultant also

discussed the need for efficient and effective data entry and for restructuring of the Finance and Accounting Department to embrace the management accounting function.

59. The presentation was followed up in the following week with meetings with Deputy Governors and Department Heads at which their reporting needs were discussed. A second workshop was held on 19 June 2013 with representatives from the business units and operating departments, highlighting and discussing the major findings set out in the “SRT Report”. A further workshop was also undertaken with external stakeholders on 10 July 2013.
60. The points made by the Consultant received general acceptance.

### 3.1 STATUTORY VS MANAGEMENT ACCOUNTING

#### 3.1.1 Identification of gaps – the need for Management Accounting

61. The main gap identified in the “SRT Report” was that the current financial reporting system is unable to relate the revenue from SRT’s primary outputs to the cost of producing them. More generally, the accounting function is focussed on meeting statutory reporting requirements, not management accounting requirements.
62. The “SRT Report” concluded that:
  - to manage its business, SRT needs to be able to measure the performance of its key business activities.
  - SRT needs accounting tools that will assist managers to manage the business.
  - SRT needs to add the role of management accounting to its accounting and finance functions to provide the appropriate support to management.

#### 3.1.2 Statutory accounting

63. Statutory financial statements are still going to be required. SRT is required by law to produce a number of financial and operational reports. Clearly any system must be designed to ensure that these reports can be produced and are capable of being audited in accordance with current GoT law and regulations.
64. SRT’s existing Finance and Accounting Department is focused on undertaking the statutory accounting and financial control functions and views the delays in production of financial statements as its main priority.
65. External stakeholders<sup>10</sup> were also consulted. They require financial reports basically as at present but requested reporting by business unit. Their main concern is improved accuracy and timeliness.
66. Whilst statutory reporting is clearly an essential requirement, the requirements are the same as those currently being met and the necessary functionality will be provided as part of any standard financial package. Statutory reporting is therefore not considered in detail here.

#### 3.1.3 Management accounting

67. If the objectives of increased competitiveness and better financial performance are to be achieved, the accounting system needs to provide timely and relevant financial information to railway managers throughout the company.
68. The key philosophy underlying management accounting is the alignment of the accounting system to the process of management. The accounting system measures the current position. As managers take actions, the accounting system records the resulting financial transactions and the new financial position. The accounting coding structure can be designed to enable

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<sup>10</sup> The principal Government stakeholders are

- Ministry of Finance
- Ministry of Transport,
- Office of Transport and Traffic Policy and Planning (OTP)
- Office of the Auditor General
- State Enterprise Policy Office (SEPO)
- Public Debt Management Office (PDMO)
- Internal Auditor Department, SRT

analysis of the transactions that caused the change in the financial position, thus making available to managers the financial effects of their actions.

69. Internal stakeholders require management reports focussing on the financial performance of SRT's final and intermediary outputs. The "Stakeholder Report" concluded that this will require either transfer charging or at a minimum a means of allocating the cost of intermediate outputs against revenue.
70. For Passenger services (commercial and PSO) it was agreed by stakeholders that the basic operating unit is the train. This requires revenue and costs to be able to be identified by or allocated to individual trains. For freight services, it was proposed that the basic operating unit be products and major customers<sup>11</sup>.

### 3.2 TRANSFER PRICING PRINCIPLES

71. Attributing all costs to final products requires intermediate outputs to be valued. This requires cost allocation principles to be established that are in line with good practice and are acceptable to SRT. This could be a full transfer pricing system based on pre-determined prices or it could be a cost allocation system. The principles are the same in each case. The Consultant proposes a transfer pricing system and that is described in this section.
72. Accounting literature offers a number of different methodologies for addressing the issue of transfer pricing. These methodologies include
  - Cost based methods:
  - Market price methods:
  - Negotiated transfer prices:
  - Dual price methods: where the price that the selling division receives is not equal to the price that the buying division pays
73. The Consultant proposes SRT adopt a cost based method where the transfer price is based on the budgeted costs of the selling division. The transfer charges would be prices agreed in advance and would be made up of three components:
  - The cost of production (wages, materials and purchases)
  - Ownership costs – primarily depreciation
  - Financing costs.
74. Three components are required because provided revenue covers the cost of production (sometimes called short-term costs) operating additional services will increase the contribution made to ownership and financing costs. However in the long term the operation must also cover ownership costs or it is not worth being in business; and financing costs otherwise it will go broke.
75. The basis for charging the cost to the final output is called the 'cost driver'. Cost drivers used by railways and typical costs that are charged are:
  - Train-km (signaling, train control, fuel )
  - Train-hour (driver wages)
  - Car-km (track maintenance)
  - Car-hour (on-train crew)
  - Loco fleet size (ownership costs)
  - Car fleet size (ownership costs)
76. Costs may vary with train or locomotive type (eg railcar, passenger, goods) and car type (sleeper, air conditioned, standard; tank, flat, hopper; etc). Most other commonly cited cost drivers such as trailing gross ton-kilometres can be converted into the cost drivers above.

<sup>11</sup> Initially proposed as products and long term contracts

77. A detailed analysis of activities has been undertaken by the Consultant to determine i) how costs should flow through the organisation and ii) the cost drivers to be used for each cost. These are discussed in detail in the “Interim Report”.

### 3.3 SRT BUSINESSES

78. A railway is a complex business and identifying the costs associated with any particular activity can be difficult. Transfer pricing allows the cost of outputs produced by one part of the railway to be charged to the other parts of the railway that make use of them. Transfer pricing thus allows us to divide the railway into component parts, where each part can be responsible for both costs and revenues.
79. SRT undertakes three principal types of business
- Provision of Train Services;
  - Provision of Locomotives and Rolling Stock; and
  - Provision of Infrastructure Assets.
80. There are a number of supporting businesses such as
- Retail sales (sale of tickets)
  - Heavy engineering workshop
  - Property management
81. And support functions such as
- Information technology
  - Stores
  - Personnel
  - Accounting

#### 3.3.1 Principal Businesses

##### 3.3.1.1 Provision of Train Services

82. The final output of SRT is provision of train services for the transportation of passengers and freight. The key requirements of the system are that the train operating units should be able to:
- Establish the cost of providing each individual train service;
  - Measure the income it receives in respect of operating each service; and
  - Measure the profitability of each train service.
83. To this extent the functionality of the system for this business function will be similar to that of an airline system. Airline systems allow the airline route manager to calculate the profitability of each flight “as soon as the aircraft door closes”<sup>12</sup>.
84. In order to achieve this sort of report capability each service will need to be allocated a unique number. It is proposed that for passenger services the unique number will be composed of two elements:
- A train number (equivalent to a flight number); and
  - The date.
85. Container services and general goods services operate similarly to passenger services with a scheduled service on which space is sold, so for these also, the train number and date is the key. By contrast, bulk freight train services are scheduled to meet the demand offering and are run for specific customers. In this case it is proposed that both revenue and expenditure is identified by product, customer and date.
86. Key to making this system work for passenger services will be the development of an interface with the externally administered ticketing systems which will allow the allocation of revenues

<sup>12</sup> Well not exactly, but this is the expression used and it clearly expresses the concept.

received to individual train services. Revenue from freight services will use the accounts receivable module, which will need to capture the required revenue information.

87. To identify expenditure, the basic requirement is to be able to assign resources to a train number/product and date. We propose this is done through a train order. The train order is similar in concept to a purchase order. The train operator “purchases” locomotives, crew, fuel, carriages, and track access for each service or product on each date.
88. Because the revenue from train services is the main operating revenue of SRT and the expenditure allocated to the train services reflects the actual cost of running the services, the contribution (revenue minus expenditure) from provision of train services is a key measure of the overall performance of SRT.

#### 3.3.1.2 Provision of Locomotives and Rolling Stock

89. This section of the business is responsible for the provision of the locomotives and rolling stock or railcars (train sets) and drivers that are used in delivering the individual train services. In effect this part of SRT hires train sets and drivers to the Traffic Business Unit. As such the functionality of this part of SRT is similar to a limousine hire company.
90. The revenue of the Maintenance Business Unit (which will represent the cost to the Traffic Business Unit) will be calculated on the basis of assets and drivers allocated to each individual train number on a daily basis at the predetermined transfer price for each class of asset or driver.
91. The costs incurred by the Maintenance Business Unit need to be allocated to specific assets allowing the business unit to monitor and manage costs on an individual asset basis and measure profitability/contribution by class of asset. The Maintenance Business Unit is introducing a maintenance management system (CMMS) that uses work orders to assign resources (ie costs) to the maintenance of assets.
92. Because the revenue is calculated based on the budgeted cost of supplying locomotives, drivers and rolling stock the difference between the revenue and expenditure (ie the contribution) of the Maintenance Business Unit reflects the success or otherwise of the unit in meeting its budget.

#### 3.3.1.3 Provision of Infrastructure Assets

93. The infrastructure business units own and maintain the track and associated equipment and facilities. Under a transfer pricing or access pricing regime, they charge train operators for using these facilities. In this way they are the same as a toll road operator that builds and maintains a highway and charges users a toll. These business units need a system with functionality similar to that used on the toll roads in Thailand. The price will be based on the cost per ton kilometre and the cost per kilometre of providing and maintaining the infrastructure assets.
94. The system needs a mechanism to for measuring the usage of these assets. With road tolls this is done by the introduction of toll booths at various points on the toll road network but such a system would be impractical on the rail network. It is proposed therefore that the charges are calculated using the train number/date. Each train number has a specified route across given sections of track. On this basis the number of train kilometres and gross ton kilometres can be defined for each train service as soon as the train composition and load is known. This can be used to calculate the charge made for each individual train service. The access charges may differ depending on the track sections used. They can be calculated automatically as part of the preparation of the train order described above.
95. The system will collate actual costs against specific assets and consolidate these costs by section of track so that the infrastructure groups will be able to compare the revenue and cost for each section. This can be achieved for maintenance expenditure by using work orders to assign resources to work on track sections or assets. The work order will record the asset, the location and list the personnel, equipment and material used.
96. Access to and use of rail infrastructure needs to be managed. This is the role of Train Control, which currently is part of the Traffic Group. For a vertically integrated railway, this is the best arrangement. However if in the future access is sold to third parties, consideration should be

given to including infrastructure access management with the infrastructure group – most probably as part of Infrastructure I whose equipment Train Control uses.

97. While SRT is the only operator, the contribution (transfer revenue minus expenditure) of the Infrastructure units measures their performance against budget. However if third party operators are introduced, the revenue from these operators will represent real income.

### 3.3.2 Supporting businesses

#### 3.3.2.1 Retail Sales

98. SRT sells tickets for its services from dedicated sales outlets at railway stations. These can be thought of as travel agencies – in fact it is quite common for
- Railway ticket outlets to sell other travel and related products
  - Railway travel to be sold through other travel agencies.
99. On a typical travel agency model, the revenue for the outlet is the commission on sales. It is thus a 'cost' to the train operator. Expenditure is generally straight forward as staff and other expenses are normally readily identifiable. Smaller stations may need some method of allocating staff between sales and other duties – ideally this will be done via the payroll rather than requiring additional modules.
100. The contribution made by the ticket offices is a measure of the benefit to SRT from having its own sales outlets compared to using independent ticket agents. The comparison to be made is between the contribution from the ticket office and the contribution that would be earned from other uses of the station building space.

#### 3.3.2.2 Workshop Maintenance

101. Makkasan is a heavy maintenance workshop within the Mechanical Business group that undertakes major repairs for the group. In concept it works like a repair garage. Work at Makkasan is already managed on the basis of work orders, this is being computerised as part of CMMS.
102. The costs incurred at Makkasan could be managed using transfer pricing, in which case the revenue earned by Makkasan would be the transfer price charged to the depot that 'owns' the rolling stock (for whom it would be an expenditure). The transfer price would be the quoted cost for the job. Alternatively, since Makkasan is part of the same group, the job order could simply be used to allocate expenditure to the asset (a locomotive, carriage, etc).

#### 3.3.2.3 Property Management

103. In addition to the three main business functions, SRT also collect rents from third parties for the use of its property assets. This business unit will need a dedicated property management system which is outside of the main SRT system and is therefore not defined in this document.
104. However, since some of this property income relates to concessions at SRT stations, the system will need to be interfaced with the main system so that station income can be allocated to individual stations.

### 3.3.3 Support functions

105. Like most businesses, SRT has support functions including General Administration, Accounting, Personnel, Information Technology (IT), Stores (purchasing). Some of these could be treated as contributory businesses but it is probably simplest to treat all these functions as corporate overhead. If the costs were to be allocated to the business units, the best measure would probably be staff numbers. Of these functions, the two most commonly treated as businesses are IT and Stores.

#### 3.3.3.1 IT department

106. The IT department is a service department. While most of what it does is in effect overhead, some work will be specific to a particular department (eg working on a ticketing interface) and it would probably be possible to devise cost drivers by which IT work could be charged out to

divisions. This is something that could be considered in the future. For now we propose to treat it as an overhead.

### 3.3.3.2 Stores Department

107. Stores or purchasing departments perform three distinct functions:

- They provide expertise where purchasing procedures are complex
- They aggregate purchases of common products to negotiate lower prices
- They help guard against corruption and fraud

108. The first two functions are potentially chargeable to other business units. However it is rare for the end users to see the expertise or discounts as justifying the cost of the Stores Department. If the main reason for the Department relates to governance, the cost is an overhead.

## 3.4 MANAGEMENT REPORTS

### 3.4.1 Report Content

#### 3.4.1.1 Primary Outputs

109. Key to the management reporting required by SRT is the reports that show the profitability of individual train services. Reports for the passenger manager would be produced in a format that makes clear the contribution that a service is making to the various different types of costs incurred by SRT. This is illustrated in Table 6 below:

	ACTUAL		BUDGET		VARIANCE	
<b>Revenue</b>						
<b>First class</b>						
<b>Second class</b>						
<b>Third class</b>						
<b>Ticket supplements</b>						
<b>Total passenger fares</b>		XXX		XXX		+/-
<b>Catering concession</b>	XXX		XXX		+/-	
<b>Parcels</b>	XXX		XXX		+/-	
<b>Total Revenue</b>		XXX		XXX		+/-
<b>Less</b>						
<b>Train Crew Costs (Non-Driver)</b>	XXX		XXX		+/-	+/-
<b>Ticketing Costs</b>	XXX		XXX		+/-	
<b>Train Control</b>	XXX		XXX		+/-	
<b>Station Costs</b>	XXX		XXX		+/-	
<b>Total Traffic Business Unit Costs</b>		XXX		XXX		+/-
<b>Less:</b>						
<b>Locomotive driver costs</b>	XXX		XXX		+/-	
<b>Locomotive fuel</b>	XXX		XXX		+/-	
<b>Provision of Locomotives</b>	XXX		XXX		+/-	
<b>Provision of Car/Wagons</b>	XXX		XXX		+/-	
<b>Total Mechanical business unit costs</b>		XXX		XXX		+/-
<b>Total Train Operating costs.</b>		XXX		XXX		+/-

<b>Contribution to Infrastructure and Fixed Costs</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Less:</b>						
Track Maintenance charge	XXX		XXX			+/-
Signal Maintenance charge	XXX		XXX			+/-
Other infrastructure charges	XXX		XXX			+/-
<b>Total variable infrastructure Costs</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Contribution to Fixed and Overhead Costs</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Less:</b>						
Locomotive Depreciation	XXX		XXX			+/-
Car/Wagon Depreciation	XXX		XXX			+/-
<b>Total Depreciation of Rolling Stock</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Allocation of Corporate overhead cost</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Contribution from Train Operations</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Less</b>						
Depreciation on Signalling Assets	XXX		XXX			+/-
Depreciation on Track and Buildings	XXX		XXX			+/-
<b>Net Earnings</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Value of Operating Assets Utilised</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Return on Operating Assets</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Value of Infrastructure Assets Utilised</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>
<b>Return on Value of Assets Utilised</b>		<b>XXX</b>		<b>XXX</b>		<b>+/-</b>

Table 6. Contribution Report for Individual Train Services

110. The intention of the report shown as Table 6 is to facilitate the management of SRT's primary (final) outputs and it sets out a detailed analysis of the contribution an individual train service makes to the various component parts of the total cost of providing the service. In practice, the cost items below "Contribution to Fixed and Overhead Costs" (other than the last four lines) will not change from month to month and need not be included in the standard report.
111. The report can be grouped with other reports of other train services to show the profitability of groups of train services to fit the management structure adopted by SRT. Based on consultations with SRT, the Consultant recommended that the reports for commercial passenger train services be grouped by line and train type to provide a 'route manager' report and then consolidated by train type to provide a 'commercial passenger manager' report. It has been proposed as part of a parallel TA<sup>13</sup> that the passenger business be organised by:
- Intercity
  - Regional
  - Commuter
  - Airport Link
  - Red Line
112. The proposed reports can be grouped in whatever manner SRT eventually adopt.

<sup>13</sup> TA-8183 THA Improvement of Railway Passenger Services.

### 3.4.1.2 Intermediate Outputs

113. Reports will be required for each individual SBU but the principles can be illustrated with reference to track maintenance. Table 6 shows the total amount of maintenance costs allocated to one particular train service operating over a number of sections of track. This information is useful for the train manager, but is clearly unhelpful for civil engineering managers who undertake maintenance activities on particular sections of track. The reports for civil engineering need to aggregate the information in a different way.
114. Track maintenance activities are undertaken on the authority of a civil engineering work order and therefore the basic unit of reporting for civil engineering maintenance is the work order. Using the cost information allocated to a specific work order, the system can compile a report showing the allocated costs to that work order against the budgeted cost. Producing a report at this level of detail allows engineering managers to:
  - Identify exactly where expenditure varied from budget;
  - Explain the circumstances surrounding the individual variances; and
  - Where possible, take appropriate action to eliminate overruns and repeat savings in the future.
115. Individual work orders can be consolidated by:
  - Individual section of track – to report costs for each Permanent Way Inspector, civil engineering division, centre or department;
  - By groups of sections of track to report cost on any part of the network that SRT is interested, for example the Northern Line; and
  - Can be compared with non-financial data gross (obtained from train orders) to establish important KPIs such as maintenance cost per gross ton-kilometre.
116. An important management control is to compare the costs that have been allocated (recovered) to the actual costs incurred. For example wage costs are allocated to work orders on the basis of the hours an employee is employed on the work order at a standard rate per hour for a class of employee. On a monthly basis the actual cost for employees will be compared to the cost that has been allocated to work orders.
117. As with all variance reports it should be used to:
  - Identify exactly where expenditure varied, in this case where allocated costs are significantly different from actual costs;
  - Understand and explain the circumstances surrounding the individual variances; and
  - Where possible, take appropriate action to eliminate overruns and repeat savings in the future.
118. Examples of work orders and variance reports are included in the Financial Report

### 3.4.2 Performance measurement and KPI's

119. Performance measurement is generally more effective when it includes both financial and non-financial measures. Key performance indicators (KPI) are used to provide succinct measures of performance that relate to the activities of individual managers. Revenues and costs themselves can provide measures of financial performance, but when they are combined with effectiveness measures, they measure productivity and cost-effectiveness.
120. Service efforts and achievement can be evaluated with the following measures:
  - Measures of service efforts - these are resource costs and other measures of the inputs used to provide the services.
  - Measures of achievements - these are outputs (the services provided) and outcomes (the effects of those services).
  - Measures that relate efforts (inputs) to achievements (outputs and outcomes) - these are, for example, the revenue per unit obtained from the various inputs, and the cost per unit of the various outputs of the entity. However, selecting appropriate measurements is quite difficult and requires the exercise of judgment. While outcomes may be far more difficult to

define and measure than either outputs or inputs, it is the outcomes of SRT's activities that provide the ultimate measurement of their success.

- Economic choice decisions: Making choices among alternative actions, such as whether to undertake a project internally or contract it out, requires cost comparisons between alternatives.
121. A suggested list of operating KPI is shown as Table 7. These have been designed around the proposed reporting structure but can be monitored under the current business unit structure.

OUTPUT	PERFORMANCE MEASURE
<b>Commercial Passenger services</b>	
Average journey	Passenger-km/passengers
Utilisation	Passenger-km/train km
Loading	Passengers/train
Yield	Revenue/passenger-km
Cost per seat	Operating cost/seat-km
Recovery	Revenue/operating cost
Forward bookings	Revenue in advance
<b>PSO Passenger services</b>	
Average journey	Passenger-km/passengers
Utilisation	Passenger-km/train km
Loading	Passengers/train
Yield	Revenue/passenger-km
Cost per seat	Operating cost/seat-km
Recovery (farebox)	Cash revenue/operating cost
Recovery (contract)	Revenue including PSO/operating cost
Forward bookings	Revenue in advance
<b>Freight</b>	
Tons	Volume
Ton-km	Volume
Utilisation	Ton-km/train km
Loading	Tons/train
Yield	Revenue/ton-km
Cost per ton-km	Operating cost/ton-km
Recovery	Revenue/operating cost
<b>Parcels</b>	
Acceptances	Number of parcels
Revenue	Amount
Revenue per employee	Revenue/employees
Contribution	Revenue/handling cost
Claims	Claims/revenue

<b>Stations</b>	
Ticket revenue	Amount
Cost of sales	Ticket sales cost/revenue
Ticket sales	Number of tickets
Sales per employee	Number of tickets/employees
Passenger service cost	Cost per passenger through station
Train service cost	Cost per train through station
<b>Mechanical</b>	
Labour cost (workshop)	Wage costs per charged hour
Labour cost (depot)	Wage costs per charged hour
Haulage cost	Loco and crew cost per train hour
Car costs	Carriage maintenance cost per car km
Wagon costs	Wagon maintenance cost per wagon km
<b>Civil (Track and Buildings)</b>	
Labour cost (track)	Wage costs per track-km
Labour cost (buildings)	Wage costs per charged hour
<b>Civil (Signalling and Telecommunications)</b>	
Labour cost (signalling)	Wage costs per charged hour
Labour cost (telecom)	Wage costs per charged hour
<b>Property</b>	
Accounts overdue	Amount > 1 month
Return	annual rent as % of property value

Table 7. Proposed KPI

### 3.5 CODING STRUCTURE

#### 3.5.1 Purpose

122. The data used by the FMIS is held in the form of a transactions database. Reports are generated by organizing the transaction data in the database using codes attached to each data item. So, for example, the income statement and balance sheet are created by organizing the data using the Chart of Accounts codes in General Ledger. The transactions database can also be used to generate management reports provided additional codes are attached to the transaction data. The richness and value of the reports that can be generated depends on the information stored with each transaction.
123. This section considers the information that needs to be contained in the transaction coding in order to be able to produce the reports required by SRT for both management and financial accounting purposes.
124. All transaction of a company can be grouped under five basic headings:
  - i) Costs associated with employees (e.g. wages and salaries)
  - ii) Costs associated with assets (e.g. depreciation)
  - iii) Other costs (e.g. costs of materials used)
  - iv) External revenue (e.g. revenue from ticket sales)
  - v) Internal revenues and costs (transfer pricing)
125. Similarly all transactions will need to be reflected in the financial statements and will therefore have to be allocated to one of five major categories:

- i) Assets (e.g. fixed asset or current assets)
  - ii) Liabilities (e.g. current liabilities or long term liabilities)
  - iii) Income (e.g. income from passengers or income from freight)
  - iv) Expenditure (e.g. staff costs or interest expenses)
  - v) Equity (e.g. share capital or retained earnings)
126. In a simple organization all the required coding can be combined into a relatively simple coding structure such as the chart of accounts, which is normally determined by the accounting regulations of a country. The only information required in the coding structure is the nature of expenditure and the grouping required for presentation in the statutory financial statements. In more complex organizations where activities are spread across different operating units under different chains of command, the organization has the need to analyse information by activity (activity coding) and by responsibility (organizational coding).
127. In designing the coding structure for SRT, the aim has been to store the data with sufficient information (codes) to allow transactions to be analysed in ways that support the key operating and management decisions that have to be made. To do this, the account code needs to identify the following five items:
1. **When** the transaction was undertaken;
  2. **What** type of transaction was it;
  3. **Where** was the transaction undertaken;
  4. **Who** was responsible for it; and
  5. **Why** was the transaction undertaken?
128. The proposed coding structure is shown as Figure 1. The various elements are discussed in detail in the [Financial Report](#) and are summarised in the subsections below.

### 3.5.2 Transaction number and date

129. All transactions should have unique systems generated identification number and a record of the date when the transactions was entered into the system in order to ensure an adequate audit trail throughout the system.

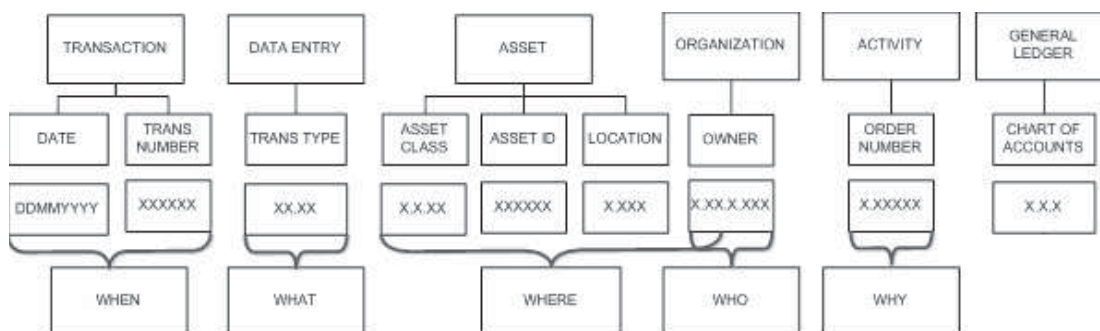


Figure 1. Proposed Coding Structure

### 3.5.3 Data Entry (Transaction Type) Coding

130. All transactions should identify the transaction type. Table 8 lists the minimum transaction types that should be supported by the system as minimum. SRT may have additional transaction types that are used for tracking certain types of expenditure.

General Ledger	Accounts Payable
<ul style="list-style-type: none"> <li>• General Journals</li> <li>• Reversing Journals</li> <li>• Revaluation of foreign currency</li> <li>• Consolidation Adjustments</li> <li>• Period Closing</li> <li>• Year End Closing</li> <li>• Opening Balances</li> </ul>	<ul style="list-style-type: none"> <li>• Purchases from external suppliers</li> <li>• Purchases from internal suppliers</li> <li>• Purchase Returns</li> <li>• Accruals for liabilities</li> <li>• Revaluation of foreign currency</li> </ul>
Accounts Receivable	Cash Management
<ul style="list-style-type: none"> <li>• Sales to external parties</li> <li>• Sales to internal parties</li> <li>• Provision for bad debt</li> <li>• Revaluation of foreign currency</li> </ul>	<ul style="list-style-type: none"> <li>• Settlements with external customers</li> <li>• Settlements with external suppliers</li> <li>• Payments to Employees</li> <li>• Payments to Government</li> <li>• Receipt from Government</li> <li>• Loans Received</li> <li>• Loan Repaid</li> <li>• Interest paid/received</li> <li>• Bank Charges</li> <li>• Transfers between bank accounts</li> <li>• Revaluation of foreign currency</li> </ul>
Fixed Assets	Project Management
<ul style="list-style-type: none"> <li>• <b>Asset Additions</b></li> <li>• Asset Disposals</li> <li>• Revaluations</li> <li>• Impairments</li> <li>• Depreciation Expense</li> <li>• Depreciation on Disposals</li> </ul>	<ul style="list-style-type: none"> <li>• Create Project</li> <li>• Create sub-project</li> <li>• Update Project</li> <li>• Transfers between projects</li> <li>• Close Project</li> <li>• Suspend project</li> <li>• Cancel/write off project</li> <li>• Expenses</li> <li>• Allocation of costs to project</li> <li>• Transfer to fixed assets</li> </ul>
Invoicing	Payroll
<ul style="list-style-type: none"> <li>• External Invoices</li> <li>• Internal Invoices</li> <li>• Credit Notes</li> </ul>	<ul style="list-style-type: none"> <li>• Basic Pay</li> <li>• Premium Pay</li> <li>• Bonuses</li> <li>• Tax</li> <li>• Other Deductions</li> </ul>

Table 8. Transaction types

131. Many of the activities carried out by SRT are associated with the maintenance of the fixed assets utilized in the provision of train services. Therefore these costs must be allocated to the assets that are maintained, identified by the asset identification number allocated within the fixed asset module.
132. Cost allocation will normally be based on the average cost associated with a group of assets rather than an individual asset. Therefore, assets must also be coded with a classification code to facilitate calculating unit costs for any particular type of asset. For example, locomotive assets will be required to carry a classification coding as follows:
  - Level 1 – Major Class (Locomotive)
  - Level 2 – Specific Class (Type of Locomotive)
  - Level 3 – Specific Component (e.g. Locomotive Chassis or Locomotive Engine)
133. Infrastructure assets in particular, are associated with a specific location on the railway network. It is anticipated that the costs of maintaining the various sections of track and

associated signalling assets will form the basis of the access charging. Each section of track will have its own maintenance cost profile and therefore such assets will be required to be linked to a location code that identifies the section of track. The division of the network into track sections will be determined by SRT.

134. Fixed assets must support definition of complex assets that will satisfy above requirement. Supplier is requested in its proposal to describe how complex asset categories will be addressed within the proposed system.

### 3.5.4 Organizational Coding

135. The reporting regime will produce reports on financial performance of the various managers within the organization and therefore transactions will need to be linked to the organizational structure of SRT. This coding will also be used to identify the owners of the assets recorded in the fixed asset register. It is anticipated that this coding structure will have up to five levels, as follows:

- Level 1 – SBU (e.g. Infrastructure 2)
- Level 2 – Department (e.g. Civil Engineering)
- Level 3 – Centre (e.g. Maintenance)
- Level 4 – Division (e.g. Southern Region)
- Level 5 – Individual Manager (e.g. Inspector responsible for section of track)

### 3.5.5 Activity Coding

136. Cost allocation is an activity based costing system with costs being allocated to activity by using a series of “orders” identified by the type of activity. The use of “orders” is discussed further in section 4.8 below. These codes will be automatically created by the system

### 3.5.6 General Ledger Coding (Chart of Accounts)

137. The General Ledger coding is based on the classifications shown in Table 9 organised hierarchically below the organizational coding set out above.

Account Code	Account Category
1000 – 1999	Assets
2000 – 2990	Liabilities
3000 – 3999	Capital
4000 – 4999	Revenue
5000 – 5999	Operating Expenses
6000 – 6999	Administrative Expenses
7000 – 7999	Currently not used
8000 – 8990	Intra-company Revenues and Expenses
9000 – 9999	Intra-company Balances

Table 9. Chart of Account Classifications

## 3.6 CONCLUSIONS

138. If SRT wishes to move towards a more commercial approach to its operations, this will require SRT, as a minimum:

- To be able to make decisions about how best to utilize its resources, both in terms of freight and passenger operations, individual railway lines (Southern, Northern, North Eastern and Eastern), and potentially individual trains on each line.
  - To be able to determine the relative profitability of each of these services.
  - To be able to attribute or allocate revenue and expenses at the appropriate level. The attribution of revenue to individual trains and service groups is straightforward. Expenses are relatively easy to allocate to lines, and where lines are shared between passenger and freight, measures of utilization, such as passenger-km, ton-km and train-km can be used. It will be necessary to establish some cost allocation principles that are in line with good practice and are acceptable to SRT.
139. Cost information should be used to facilitate cost control and to enable cost reduction. For example, with appropriate cost information, managers can:
- Compare costs with known or assumed benefits of activities; identify value added and non-value added activities; and make decisions to reduce resources devoted to activities that are less cost-effective.
  - Compare cost changes over time, identify their causes and take any appropriate action, for example, take steps to improve efficiency.
  - Identify and reduce excess capacity costs.
  - Compare costs with similar “benchmark” activities, find the causes for cost differences, and take any appropriate action, for example, revise and improve business processes.
140. The role of the Accounts Department will need to change. Currently it spends its time on data input and validation. In the future much more time needs to be made available for analysis to support management decision making. Some accounts staff will need to specialise to provide services to individual business units.
141. There are some wider issues that need to be addressed with the GoT if SRT finances are to be returned to a firm footing
- Fare and tariffs need to be set at commercial levels
  - PSO payments need to be agreed for all non-commercial activities based on a realistic cost of provision for existing services or a predetermined rate for new investment
  - SRT needs to be able to use the proposed FMIS to help in negotiating fares and PSO payments
  - Financial restructuring should be considered to move historical debt and pension liabilities off the main SRT balance sheet.

### 3.7 CONSULTATION

142. The issues discussed in this chapter were first presented in the Stakeholder Report and were developed further in the Financial Report. The conclusions of these reports were presented to SRT management in workshops held on 23 August and 9 October.
143. In addition, the reporting proposals were discussed in a series of meetings with groups of staff from Finance and Accounting Division and from the business units. These meetings were conducted by the local consultants in Thai language.
144. The workshops, presentations and meetings arranged by the Consultant have been well attended and the proposals made by the Consultants appear to have been accepted by SRT officers at all levels of the organisation.
145. Feedback from SRT on the reports has, to date, related to issues of fact and interpretation rather than to the thrust of the recommendations.

#### 4.1 NEED FOR AN FMIS

146. The last chapter identified a number of issues facing SRT and showed that improved management information was a key to improving management decision making and effectiveness. A well-designed and implemented financial management information system (FMIS) is considered critical to the future of SRT. This chapter describes the proposed FMIS, the purpose and guiding principles behind its introduction and its application to SRT.
147. The system has been designed as the tool to enable SRT's Finance and Accounting Department to deliver the management information critical to SRT's future.

#### 4.2 FMIS AND ERP

148. SRT requires a range of information systems. Under this project, the consultant has developed specification for the financial system – an integrated FMIS. The financial system is normally at the core of any enterprise resource planning (ERP) system.
149. Although SRT has a central IT department maintaining a central infrastructure, an increasing number of departments in SRT have introduced, or were planning to introduce, their own systems. This approach overlooks the interdependencies of operations for an integrated system of management reports, which is critical to effective management of the company. It also ignores the link between operational and financial information that is critical for management reporting. One consequence of having many independent systems has been that the current financial and management reporting system captures information at a highly summarized level which reduces its functionality for management reporting.
150. Currently, valuable management information that is available at the individual operating unit level is not available to the company as a whole. Where detailed information is required (for example for use by the Costing Division) a significant amount of manual collation of information from various different operating units needs to be undertaken. Such a process is not only time consuming but also subject to a high probability of error and as a result management are compelled to make important decisions based on incomplete or inaccurate information.
151. SRT is now committed to ERP in which the FMIS will play a central role. In a closely integrated ERP system, data is captured or input once and then shared amongst all modules, thus removing the need for data interchange and manual interfaces between systems.

#### 4.3 SCOPE OF THE PROPOSED FMIS

The scope of the functional modules to be included in the specification and the high level application architecture for FMIS is illustrated in Figure 2. The specification of the FMIS includes the functional requirements for the following key modules:

- General Ledger with Budget Support
  - Consolidation
  - Accounts Payable
  - Accounts Receivable
  - Invoicing
  - Cash Management
  - Fixed Assets Register
  - Costing
  - Project Management
  - Reporting
152. Purchasing, Inventory and Maintenance Management modules are in the process of being introduced as part of the CMMS. SRT purchased these as standalone modules from Oracle E-

Business suite of programmes. E-Business incorporates FMIS modules needed but in addition offers a range of other ERP functionality that will be needed by SRT. Given that SRT has already made capital investment in E-Business, standardising on this platform is clearly one possible option. They will not have to be replaced if the new system is on the same platform or can be effectively interfaced.

153. Payroll and Human Resources are not being specified as part of this project but will be purchased at the same time and will be integrated with the FMIS. SRT is in the process of specifying these modules and intends to include these with the same tender documents as for FMIS.
154. The proposed modules will replace the applications currently in place. They will be designed and configured to support the financial management and reporting requirements of the whole company. This does not include the Airport Link that operates its own financial systems based on SAP. Interfaces must be developed between this system and FMIS for automatic data transfer and for consolidation purposes<sup>14</sup>.
155. It is proposed that the core FMIS modules must be purchased as integrated solution and as part of a single software package.
156. It is proposed that the new FMIS will be web enabled and that it can be accessed through internet or intranet. In the short term access will be provided internally to the central finance and accounting departments. As accounting in SRT is decentralised, access to the FMIS will be provided through telecommunication service providers. It is assumed that the hardware and associated network equipment for the FMIS will be installed centrally in a suitable data centre operated by the IT department.

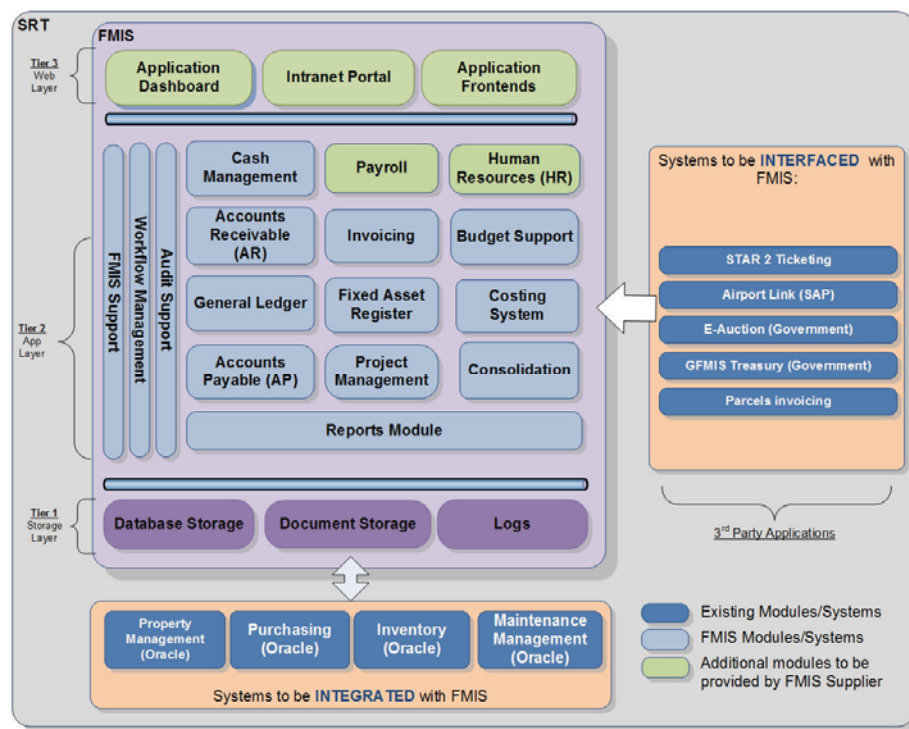


Figure 2. Proposed High Level Application Architecture for FMIS

157. A budget preparation module has not been included at this stage to avoid complexity with introduction of FMIS. Other reasons for its exclusion are discussed in the Implementation Plan.

<sup>14</sup> If a SAP system is purchased for SRT it may be worth integrating the systems.

158. It is normally not possible to purchase payroll as part of off-the-shelf software without major changes to the functionality. The Consultant previously suggested that SRT may wish to redevelop the existing payroll system on a modern platform and ensure that its design is consistent with that of the FMIS as described in the next section. Payroll has not been included in the core FMIS. It is understood that that HR will proceed with procurement of a Payroll and HR system in parallel with the FMIS development. SRT currently intends to combine the procurement of these systems in a single tender.
159. All other modules are already in existence.
160. There are other applications SRT will need as it develops its ERP. These are not discussed in this report and not included in the above as they are not in the scope of the project. Apart from the Payroll module, the Consultant recommends that SRT delay introduction of further IT applications until the FMIS is fully implemented or SRT develops a coordinated ICT Strategy.

#### 4.4 THE ORGANISATION STRUCTURE

161. The Consultant recommends that management reporting be structured around the core businesses (outputs) rather than around functions as at present. Such a large change in business focus would normally require significant structural change to the organisation. Previous studies have proposed various forms of reorganisation to achieve a more business focus. The Consultant believes that it would be desirable for SRT to align the organisational structure with the proposed reporting structure so that SRT is managed on the basis of outputs. However the proposed FMIS does not require this to happen.. The FMIS coding structure proposed by the Consultant is sufficiently flexible to accommodate the present organisational structure as well as possible future developments.
162. The reporting structure will thus be different from but compatible with the current organisation structure. SRT is currently organised into three business units and three divisions but none of these are profit centres in the true sense of the term because they are not responsible for both revenues and attributable costs. It is proposed by the Consultant that SRT organise its accounting and reporting around the following key business segments:
  - Commercial Passenger;
  - PSO Passenger;
  - Stations;
  - Parcels;
  - Freight;
  - Mechanical;
  - Infrastructure 1 (Track and Buildings);
  - Infrastructure 2 (Signals and Telecommunications); and
  - Property.
163. Management of the first four of these segments is currently complex: operational management of all transportation activities including stations is undertaken by the Traffic business unit (TBU). Revenue management (decisions about which train services to run and the associated tariffs) are the responsibility of the Commercial Department within the TBU. Crews for locomotives and railcars are provided by the Mechanical business unit as is the rolling stock.
164. The other segments correspond to existing divisions or business units. The Parcels business could be treated as a separate business unit or as a revenue stream for the passenger businesses. For the purposes of this report, we will treat it as a separate business pending a decision by SRT. The Container business is currently treated as a separate business but is logically a sub-segment within the Freight business segment.
165. Some business segments are further divided into sub-segments. For example Mechanical is subdivided into Makkasan Workshop which runs the heavy maintenance workshop and Operations which manages the depots and locomotive crew. For reporting purposes we propose that Operations be further divided into rolling stock leasing and train operations.
166. Each business segment or sub-segment consists of a number of operating units which may be further subdivided or may be grouped for reporting purposes such as by geographical areas.

Head Office management is organised into functional divisions. In the business segments, immediately below the sub-unit level, are departments corresponding to the Head Office divisions. The way the proposed business segments relate to the current organisation structure is shown in Figure 3.

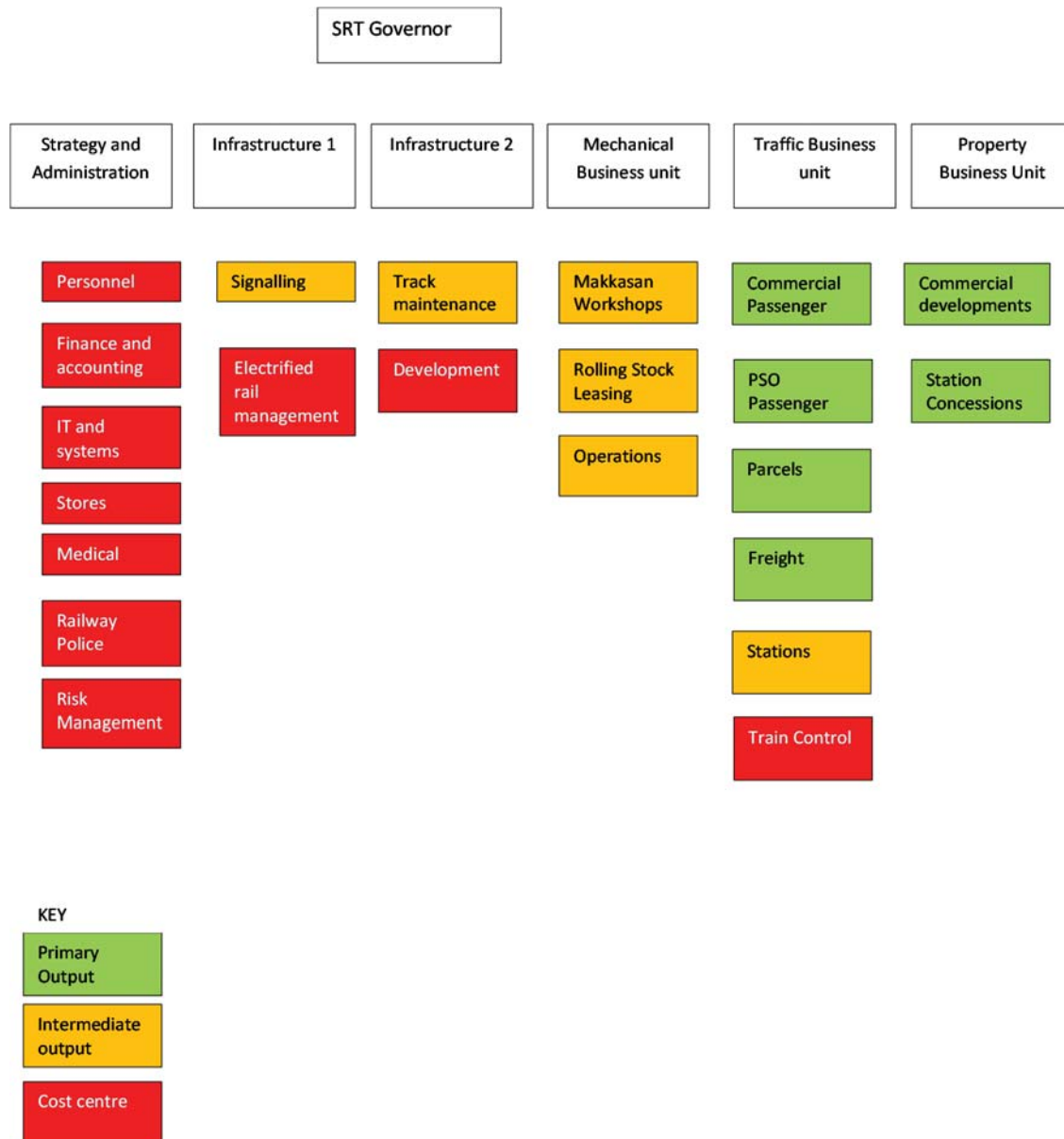


Figure 3. Proposed High-Level Structure of SRT

#### 4.5 THE MAIN DESIGN CONCEPTS OF FMIS

167. Central to designing a FMIS that meets the requirements set out in section 3.5 above is delivering information appropriate to the decisions being made by individual managers within SRT's management and organizational structure. Each Individual manager within any organizations requires information to:

- Inform on present performance levels;
- Allow analysis of variance between actual performance and planned performance; and

- Indicate what needs to be changed in order to meet planned performance.
168. This means that reports have to be tailored to individual managers, detailing information that specific to their responsibilities. Therefore, the reports need to highlight those areas where managers can control revenue and/or expenses.
  169. If performance is to be improved then the FMIS must be designed to generate that measure performance at basic levels of activity. This will enable problems to be identified and resolved at the level where action can be taken.
  170. The key aspects envisaged for the new FMIS are:
    - To be a fully integrated system with data being captured as near to source as possible
    - To capture and measure all revenues and costs of SRT
    - To allocate all revenues and costs to locations
    - To allocate all location costs to activities
    - To allocate all activity costs to outputs
    - To allocate the use of assets to outputs
    - To match all costs with the identifiable income streams of SRT
    - To produce reports that support decision making at all levels of management within SRT
    - To produce consolidated annual financial statements that can be audited within an acceptable time period.
  171. For the FMIS to be of value, it must capture all revenue and costs to ensure that the financial data are complete. In addition the system must measure the costs in a consistent way that, as far as possible, results in an accurate reflection of cost attributable to the various business units.
  172. Management at SRT is carried out at individual locations and as such this is the primary unit for recording costs and revenues. Therefore all cost and revenues should initially be allocated to specific locations. Locations are linked to specific Business Units within the SRT corporate structure. Recording financial information by location allows performance to be measured for each location.
  173. Costs result from undertaking activities, therefore to control costs management needs to control activities. The FMIS needs to report the total cost of each activity undertaken by the operating units. This is the first step in controlling costs. Activity Based Costing gives the most accurate costing information for services that require the completion of a number of diverse activities to deliver the final service delivered to the customer.
  174. In order to assess its financial performance, all costs incurred by SRT have ultimately to be matched to the income SRT receives from its train services and its property portfolio. Where there is no immediate nexus between activities that incur costs and outputs, the costs must be allocated using the most appropriate cost drivers. Allocating activity based costs to outputs generally will involve some form of transfer pricing. Cost drivers identified for each activity of SRT need to be used in order to establish the most accurate measure of how SRT is performing across its various outputs if management are to make coherent business decisions. Transfer pricing and the appropriate cost driver for each activity was discussed in detail in the Interim Report.
  175. In some cases the activity will be to construct or maintain an asset rather than to produce a final output. Assets are, in effect, intermediate outputs. Under the current SRT structure, the business unit that produces SRT's final outputs, the traffic Business Unit, does not own any of the assets used. Track and lineside equipment is 'owned' by the Infrastructure units, while all rolling stock is owned by the Mechanical Business Unit. From the custodial viewpoint this is sensible. However for the train operating units to understand their costs, the train operating report must identify the ownership costs of the assets. These are primarily depreciation and interest on capital employed. There are two ways of doing this – either i) a charge needs to be made for the use of the asset or ii) the report has to show the value of the assets used. In the Financial Report the first approach was proposed - viz that that the transfer prices include

explicit charges for depreciation and cost of capital. This approach guarantees that the business segment that owns the asset gets a pre-determined rate of return. In Table 6 in Section 3.4.1.1 above, the value of the assets utilised is shown and depreciation and a return on assets is calculated based on this value. In the second case, the rate of return varies depending on the performance of the train operating unit. The first approach is appropriate for contracted services such as PSO passenger where the contract includes a guaranteed rate of return. The second approach is more appropriate for commercial operations where the rate of return on assets is a key performance indicator.

176. While the introduction of management accounting and reporting is critical to SRT's future, SRT will still be required to produce standard financial reports. SRT's latest audited financial statements are for the financial year 2008/09. Many of the audit issues relate to the accounting treatment of fixed assets within the current SRT accounting system. The FMIS must address such issues and ensure that the statutory financial statements can be produced with the minimum amount of manual adjustment to the figures at the end of the accounting year.

#### 4.6 TREATMENT OF PSO

177. Many of SRT's activities are undertaken for non-commercial reasons or at non-commercial rates. In the case of investment in new infrastructure, the justification for undertaking the investment is the economic return - measured using cost benefit analysis - not the financial return. In the case of subsidised passenger services, the justification for the subsidy is the benefit provided to the passenger. Even when the reason is overtly social rather than economic, the benefit can be seen in economic terms as a consumer surplus. An issue arises when the costs of these activities are recognised in the SRT accounts but the benefits are not:
178. Where GoT requests SRT to invest in new routes or services for economic reasons, part of the approval for the investment should be an agreed payment to ensure SRT is rewarded financially. GoT has been providing the capital for new projects through increased equity – either cash or low cost loans backed by the government. This addresses the cash flow, but increases the value of the assets so that SRT's return on assets has been deteriorating.
179. The Government mandates the provision of certain services at reduced fares and has an agreement to compensate SRT accordingly. This is a contractual payment for providing an agreed service – it should not be seen as a subsidy to SRT. Current PSO payments contribute to the cost of running passenger services but the payment formula is based on historic costs and is insufficient to enable SRT to invest in new rolling stock or to undertake major maintenance.
180. The proposed FMIS will help SRT identify the true cost of operating the PSO services and thus will be able to be used by SRT in negotiating a contract payment. Internationally there is often debate as to whether PSO payments should be on a marginal or fully allocated basis. Since PSO services dominate SRT operations over most corridors, the Consultant believes that GoT should be paying the full ownership costs for the resources used.

#### 4.7 THIRD PARTY ACCESS AND ACCESS PRICING

181. In principle access pricing is just one form of transfer price. Access prices are transfer prices that relate to:
  - Track and buildings (including access to stations and terminals)
  - Signaling and communications, electric traction
  - Train control
  - Some station costs.
182. However there are three inter-related issues that complicate the situation
  - The access pricing scheme must allow for third parties. This means that the rate setting process must be transparent and fair.
  - Variable track costs are generally less than average costs. Hence a price that covers variable costs will leave a deficit.

- Rail's main competitor, road transport, does not pay all the costs of its infrastructure. There is thus an argument for a government subsidy in order to promote an efficient transport outcome.
183. There is a good economic argument for access prices to cover the marginal operations and maintenance costs but for all other costs to be met directly by the government. If this were to be the case, this would need to be reflected by the accounting system and in the design of the FMIS reports.
184. Currently SRT operations do not generate sufficient revenue to provide any contribution to any of the infrastructure costs. The Consultant recommends that the initial objective of SRT should be to cover the variable costs, and that access charges should be set accordingly.

#### 4.8 BUSINESS PROCESSES AND DATA ENTRY

185. Key propositions that define the design of the system are that data will be entered only
- Once
  - As close as possible to the activity it records
186. To achieve this, the system should be designed to minimise the requirement for repetitive manual data entry. This will be achieved by close integration of key modules within FMIS and by ensuring that all relevant transaction information is captured and input in FMIS when the transaction occurs and can then be used further down the line of the accounting and reporting process.
187. Furthermore, SRT should aim transaction data close to where the transaction occurs so that this capture detailed and accurate information is entered in the FMIS and subsequently used for analysis and reporting. Future decentralisation of the accounting as described in Section 5.2 below would improve the quality of data input and control.

##### 4.8.1 The Role of the “order”

188. All transactions, with a limited number of exceptions (journal entries for example), will be entered into the system using a “job order”. Requiring a job order to initiate a transaction is a common feature of most accounting systems, for example, it is not normally possible to purchase an item without a properly approved purchase order.
189. Orders give the approval to undertake an activity, and thus allocate valuable resources for a specific purpose. The purpose of the activity defines how the related expenditure should be allocated.
190. The main part of the system has been designed around five key “orders”:
- A Purchase Order
  - A Stores Order
  - A Work Order
  - A Train Order
  - A Project (the authority to incur expenditure on capital items)
191. In all cases validation routines will ensure that the order relates to a valid asset or location (a cost centre) or a further activity.
192. The business process that establishes the order and the resources to be recorded are described briefly in the following sub-sections. A more detailed description of the information flows within specific SBUs has been developed as part of the system specification.

##### 4.8.2 Train order

193. The majority of orders referred to in section 4.8.1 already exist within the SRT system. The train order is the only innovation in the system to facilitate the allocation of costs to specific train services. The train order should be created in the marketing department that sets the train service schedules. Assets are allocated to a train order by the originating depot for the service. There are only a small number of locations that are origin points for train services so these should be able to be computerised.

#### 4.8.3 Rolling stock Maintenance

194. The CMMS being introduced by Mechanical already provides for work orders of the kind envisaged. However these are currently used for internal control rather than for cost allocation for SRT wide management accounting. It will be necessary to review the format and use of data generated by the CMMS to ensure it is compatible with the FMIS management accounting principles. Once this is done, no further data capture will be required.

#### 4.8.4 Civil Engineering

195. It is expected that Civil engineering will be able to use the same maintenance management module as mechanical. While some processes will need to be set up in different ways, it is likely that the basic computer package that has been purchased will be able to accommodate the differences. Civil engineering operates from nine depots and has departmental offices in head office. Head office sets up the work orders for mechanical maintenance and they will have personnel and other resources added by the supervising engineer. The nine supervising engineers would generate work orders for routine and unplanned maintenance in their divisions. There will be a requirement to report back actual work done to the supervising engineer who will update the order.

#### 4.8.5 Signalling and Communications

196. It is assumed that the same CMMS will be used by Signalling and Communications. Signalling and communications operate four Regional Divisions but these are further subdivided in to smaller geographically based units. The 'worst case' scenario is that Signalling and Communications will be based at locations that are different from Mechanical or Civil. However it is more likely that although in different offices, the offices will be nearby, allowing communications facilities to be shared.

#### 4.8.6 Other Transactions

197. There are a number of other transactions that need to be captured, but do not require further allocation after initial capture - wages at stations for example –where it should be possible to use the originating module (eg payroll) to generate the required data and, unless there is an automated interface between the respective systems, these types of transaction will be entered into the FMIS by journal entry. Journals will continue to be entered and processed centrally until such time that accounting is decentralised.

#### 4.8.7 Allocation of Transactions

198. One of the critical objectives of the system is to allocate transactions so as to create a revenue and expenditure nexus for individual primary outputs so as to measure, monitor and assess the financial performance at the primary output level rather than the corporate level.
199. The orders referred to above are used to allocate the value of an item from its initial purchase through to its ultimate recognition as either an item of expenditure or an asset in the financial statements. The complete process of allocation is set out in Figure 4.

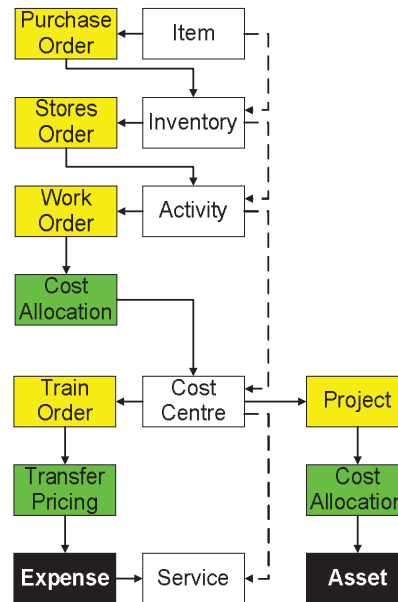


Figure 4. Use of “Orders” to allocate resources to activities, services and assets

#### 4.9 OTHER REPORTING REQUIREMENTS

200. In addition to the financial reports required to meet the statutory reporting requirements, the “Stakeholder Report” set out four types of report that should be available from the FMIS. These are:
- Input validation reports that reproduce the data input into the system. These will normally be produced as part of the activity that generates the input and will include some analysis of the data to enable cross-checks to be made.
  - Periodic reports that track the performance of the various business segments. An important feature of periodic reports is that they are consistent over time and between business units, enabling meaningful comparisons to be made.
  - Ad-hoc reports that can be set up and reproduced as required to meet specific management requirements or to monitor specific activities.
  - Queries that enable the information on the database to be searched for specific data as required.

#### 4.10 CONCLUSIONS

201. The proposed FMIS is an integrated system that enables the collection, analysis and reporting of financial information to support the management accounting functions described in Chapter 3. FMIS is the tool that the Management Accountant can use to assist SRT managers to manage their components of the business.
202. FMIS is a critical part of the future ERP system for SRT
203. The requirements for an FMIS for SRT include
- A mechanism for allocating costs to outputs (transfer and access pricing)
  - A coding structure
  - Decisions relating to treatment of assets, PSO and access charges
  - Data capture as a part of business processes as far as practicable.

#### 4.11 CONSULTATION

204. The concepts presented in this chapter were presented in the SRT, Stakeholder and Interim Reports, and to SRT management at workshops held on 8 October,
205. There appears to be general acceptance of the principles recommended.

### 5.1 NEED FOR REORGANISATION

206. The basic philosophy for this project has been to fit the system to the organisation, not to require the organisation to change to accommodate the system. Thus although the proposed reporting structure differs from the current organisation structure, it has been designed to be compatible with the current structure.
207. SRT may see advantages in the future of moving to a business segment based organisation, but this is not essential. The FMIS will be designed to allow for changes to the organisation structure in the future.
208. There is one area where a change in organisational structure is recommended, and one area where it may prove difficult to realise the benefits of the new reporting package without some internal restructuring. These areas are discussed in this section.

### 5.2 ORGANISATION OF FINANCE AND ACCOUNTING

#### 5.2.1 Current Organisation

209. The Finance and Accounting Department is located at SRT headquarters in Bangkok. The Department is divided into two directorates: Finance and Budget; and Accounting, each headed by a Deputy Director. Each Directorate is organized into Divisions, while lower level areas are referred to as Sections. Accounting activities that occur elsewhere within SRT's organization are generally limited to data handling and administrative functions.
210. The activities of the Finance and Accounting Department are currently heavily focused on preparing monthly and annual financial accounts to be used as the basis of preparing annual financial statements for use by stakeholders external to SRT and are dominated by data processing, rather than financial control and financial management. There is little evidence of any other form of internal management reporting. The new FMIS will facilitate a much greater degree of automation of basic business and financial processes, allowing the department to focus on improved financial management and control.
211. To achieve the benefits of the FMIS:
  - The Finance and Accounting Department needs to embrace the new function of management accounting. This will require training in analytical skills
  - Finance and Accounting staff undertaking the management accounting function should specialize in particular outputs so that they can better assist the product managers
  - Decentralisation of the Management Accounting function to place accountants within their client business units and closer to the workplace needs to be considered.
212. This implies reorganisation of the Finance and Accounting Department.

#### 5.2.2 Change Philosophy

213. The issues that have been considered in developing proposals for reorganisation have included options for level of decentralization, the level of financial management resources in head office vs. other locations, the impact of move from data processing to information production, the appropriate level of review and analysis, management reporting, decision making, impact on stakeholders and representation of stakeholders.
214. In formulating these recommendations, the Consultant has adopted the following underlying principles:
  - The automation of data processing provided by the new FMIS will make capacity available that can be used to create management accounting and reporting capacity and financial control capacity. These will be the two main functions of the Department once FMIS is implemented.

- Functions that will be largely unchanged by the FMIS have been retained with as little change as possible. However, there will be a need for some of current data processing capacity to be relocated from head office to other locations.
215. The proposed structure is based on two Directorates: a Financial Accounting and Reporting Directorate and a Management Accounting and Reporting Directorate. The Management Accounting and Reporting Directorate incorporates the new management accounting functions. It will include a new Management Accounting Division, which will be responsible for producing reports that can be used to monitor business performance and proposing actions relating to improving business performance. The Management Accounting Division will have separate sections for each business unit.
  216. The Financial Accounting and Reporting Directorate will incorporate the existing statutory accounting and corporate finance functions. It will include a new Financial Control Division, which will be responsible for the production of reports from the new FMIS and checking that they are complete and accurate.
  217. These recommended changes are described in more detail in the following subsections.

### 5.2.3 Management Accounting and Reporting Directorate

218. The existing Finance and Budget Directorate should be re-positioned as the Management Accounting and Reporting Directorate, reflecting the importance of this aspect of the activities of the Finance and Accounting Department. The new directorate will continue to carry out the existing activities of the Finance and Budget Directorate (treasury, budgeting, financial planning and statistical reporting) because all of these activities will continue to be required by SRT, either for internal or external purposes.
219. The current Statistics and Costing Division should be transformed into a Management Accounting Division, with separate sections for each business segment, with each section responsible for producing and commenting on monthly management accounts and related reports for its business segment. The primary objective should be to produce management information to support decision-making. These decisions will include financial, investment, borrowing and other financial aspects of running the business of SRT.
220. The structure and content of the necessary management information should be driven by the nature of the decisions that it will inform. There should be regular (for example monthly) meetings at which these reports are discussed, variances from budgets are reviewed and diagnosed, and appropriate actions to improve poor performance formulated.

### 5.2.4 Financial Accounting and Reporting Directorate

221. The primary objective of the Financial Accounting and Reporting Directorate should be to produce accurate financial information for reporting externally according to prevailing accounting and audit regulations. This requires an emphasis on financial control, and on producing and reviewing financial information rather than simply processing data.

#### 5.2.4.1 Financial Control Division

222. The existing Revenue Accounting Division and Expense Accounting Division and the two Fixed Assets Divisions should be combined into a new Financial Control Division, responsible for confirming the completeness and accuracy of all financial information produced.
223. These verification processes are likely to be extensive and will include: reconciliation of data in the FMIS with data held in other financial systems such as fixed asset and payroll data; exception reporting, such as data with negative values where these are not expected; and data with dates outside the processing period. With increasing experience it may be possible to reduce the extent of checking required.

#### 5.2.4.2 Data Input

224. One of the key principles of the FMIS is that data should be processed as close as possible to the source of the transactions. Ideally this will be achieved by making data capture part of the business process. For example data on maintenance of rolling stock will be captured within the CMMS being introduced by Mechanical Business Unit. However there will still be many

transactions that are not captured in this way, such as miscellaneous purchases. This remaining data input task will need to be managed by a small Data Input Division in the Financial Accounting and Reporting Directorate.

#### 5.2.4.3 Corporate Accounting Division

225. The existing Accounting Compilation Division should be transformed into a Corporate Accounting section, which is responsible for producing all financial reports that SRT corporately is required to produce, mainly for external use, such as annual financial statements. Although the raw financial information should be produced from the FMIS and verified by Financial Control, in practice there is likely to be additional analysis required.

### 5.2.5 Decentralisation of the accounting function

226. In a company the size of SRT, it is normally expected that there will be regional accounting units close to where there is concentration of transactions to take responsibility for data entry and reconciliation of financial information. This improves the quality of data entry as these accounting units have better understanding of the nature of transactions and how they should be allocated to the organisation, unit and activity. This approach also avoids the need for transfer of paper and reduces the workload at head office. Reconciliation of data by these accounting units also makes the job of consolidation and financial reporting at head office easier. Such accounting units are normally established by major operating units (such as freight, passenger transport, Mechanical, engineering etc) or regionally or any other logical breakdown that make sense in the context of the specific organisation. SRT has very much a flat organisation and all management is centralised at head office. SRT management must consider the best approach to creating sub accounting units and ensure that these units are staffed such that there is full control over the quality of data entry and reconciliation of data. These units must be headed by qualified accountants. Our proposals for stages in restructuring the finance function are provided in the "Financial Report". It is expected that decentralisation will occur following the restructuring of the head office finance function and initial implementation of FMIS.

## 5.3 ORGANISATION OF THE TRAFFIC BUSINESS GROUP

### 5.3.1 Current Organisation

227. The Traffic Business Unit is organised as three departments:
- The Traffic Department;
  - The Commercial Department; and
  - The Container Transport Bureau.
228. Together these three departments are responsible for most of the final outputs of SRT. The Traffic Department is responsible for operating the trains whilst the Commercial Department is responsible for revenue.
229. Outside head office, the Traffic Business Unit is mostly organised geographically making it impossible to isolate transactions based on business types and primary outputs. Traditionally all local activities were based at the railway station with all station staff being responsible to the Station Master. The traffic Department is responsible for the Stationmaster and thus for most of the business unit's activities.

### 5.3.2 Options

230. With modern communications and the trend to providing dedicated facilities for specific functions it is becoming more common in the railway sector for local staff to report on functional rather than regional lines. This provides the opportunity to reorganise around outputs.
231. The Consultant suggests that SRT consider restructuring the Unit based on final outputs. The Container Transport Bureau provides an example of how the outputs might be organised. The bureau has a manager, with commercial, operations and administrative sections reporting to

the manager. Under this option, the unit would be organised into a number of product groups each responsible for revenue and operations.

### 5.3.3 Requirements for FMIS

232. To enable reports to be prepared by outputs, the current structure needs to be divided functionally. The functions of the Traffic Business Unit include :
- Service planning and marketing
  - Sale of tickets
  - Acceptance of parcels
  - Provision of on-train crews
  - Passenger services at stations
  - Train handling
  - Wagon supply
  - Provision of Stations/Freight Terminals
  - Train Control
233. Service planning and marketing is currently undertaken by the Commercial Department and is already largely organised by product. Ticketing is related to provision of passenger train services. This is the passenger train operator responsibility. It may be shared between train operators if more than one uses a station but this is relatively easy as the train number is identified when the ticket is sold.
234. The parcels business segment is not identified separately within the current organizational structure. It is proposed that this business segment be treated as a separate sub unit of the passenger businesses. The income stream and the associated costs needs to be isolated and reported separately so as to assess the financial performance of this business segment.
235. Provision of on-train crews relates purely to passenger trains. Provision of train crews is a business activity that is the responsibility of the train operator, the organization that provides the train services. Operationally it may be possible to manage a single pool of train crew and to charge them to commercial or PSO trains based on actual requirements. This is a cost element that needs to be isolated so that it can be allocated to specific train services. The use of train orders will allow the system to do this.
236. Wagon supply is the management of the movement of freight wagons to ensure wagons are available for loading at the right place at the right time. This is normally a traffic department function in close cooperation with the Mechanical Business Unit. It is primarily a freight operation issue, although some planning of passenger train consists will be required.
237. Train handling is related to provision of train services and involves such things as pre-departure safety checks. It involves organizing a service so as it departs on time and in good order. Most activity takes place at stations for passenger trains and goods yards for freight trains, and would be easy to separate.
238. Train control uses the railway signalling system and instructions to train crew to manage access to and use of the railway network. It involves planning and timetabling of services in advance as well as 'on the day' rescheduling of services to accommodate delays, breakdowns, additional services etc. Timetable planning and agreeing priorities for trains must be done in cooperation with the train operators.
239. Train planning, handling and train control are currently handled together by divisions of the Traffic Department. In a vertically integrated railway such as SRT it makes sense for the train control function and the train operations management functions to be undertaken within the same department. However, if in the future third party access is permitted to the network, the role of train control should be undertaken as part of the network management function rather than as part of the train operations function. This would give the train control function a necessary independence and allow the cost to be passed on to the third party using the access

charging mechanism. Whether or not train control is made independent, it will be necessary to isolate these cost elements for costing purposes in the coding structure.

240. Railway stations, which provide the main passenger contact and sell the tickets, are organisationally responsible to the Traffic Department. The use of stations normally represents an element of the access charge to train operators but train operators will also provide their own staff to handle their own services. The proposed reporting structure allows each of the activities performed at a station to be able to be grouped and reported by activity (eg ticket sales) but will also allow all activities for a particular station to be identified and reported.
241. Table 10 shows how it is proposed that the expenditures of the Traffic Business Unit are identified and coded. The rows of the table represent business segments and the columns are current divisions or subdivisions of current divisions. The transaction codes will identify which cell of the table the activity belongs to and will allow reporting of contribution by business segment without changing the current organisation of the unit. However it would also facilitate any future reorganisation along business segment lines.

	Commercial Division		Traffic Division		
	Planning	Marketing	Customer service	Train facilitation	Train control
Commercial passenger	Service design, fares	Marketing	Train crew		
PSO passenger	Service design		Train crew		
Parcels	Service design. Rates	Marketing,	Parcel staff		
Freight Services	Market research. Customer liaison	Marketing	Terminal staff	Wagon Supply Train inspectors	
Stations			Ticket sales, porters	Train inspectors	Local area control
Train Control					CTC control Signalling

Table 10. Principal activities of the Traffic Business Unit

242. The functionality of the report module will allow information collected at the station level to be aggregated so as to produce managerial reports at the regional level. The only implication is that some managers will receive more than one report where the information is presented by business type.
243. Some staff members currently undertake multiple functions and this situation is likely to continue. In this case the staff member would be designated for the primary function but some time would be reallocated to other functions on an agreed basis. A methodology for allocation will need to be considered during the implementation of this project.

#### 5.4 AIRPORT LINK AND OTHER SUBSIDIARIES

244. As noted in Section 5.1 above, the proposed coding structure is designed to be consistent with the current organisation structure, but it would enable the move to a product based organisation structure in the future. Reporting will be for primary outputs such as commercial passenger, with data collected at the level of an individual train. Implicit in this is the ability to report for specific groups of trains such as the Airport Link services. While SRT may prefer initially to retain the current reporting for the Airport Link and to consolidate the accounts manually, a future option would be to discontinue the use of a separate accounting system for Airport Link Services and use the capabilities of the FMIS to identify Airport Link costs and revenues.

245. Similarly, should SRT wish to separate any other group of services (the Mae Klong services for example) and manage them separately, this would be a simple matter of specifying reporting groups to reflect the proposed management arrangement. Services provided by SRT parent to the subsidiary would be charged for using invoices created by the transfer pricing mechanism already being introduced with the only stipulation being that the rate charged for the services would be a fixed negotiated rate rather than a rate set through the SRT budgeting process.

## 5.5 CAPACITY DEVELOPMENT

### 5.5.1 Identification of Needs

246. A significant level of up-skilling will be required to develop the necessary technical capacity to enable SRT to take advantage of the opportunities offered by new FMIS. This includes changes in skills specification, education and professional skills, and training.
247. SRT's capacity to provide financial advice both internally and externally is currently severely limited by the absence of reliable management information. Simply implementing the new FMIS and reorganizing SRT's Finance and Accounting Department will not be sufficient in itself to address this issue; there will be a need for SRT to provide staff training and in some cases take on staff with additional qualifications and experience.

### 5.5.2 Recruitment and Contracting

248. The change in functionality from data processing to financial control, management accounting and reporting will necessitate a change in the skills profile of the staff in the Finance and Accounting Department. It is recommended that a small number of accountants with direct experience in the use of financial control and reporting are recruited. Such individuals are most likely to be found in private enterprise. These individuals should be given responsibility for developing the proposed financial control and management accounting activities within SRT.

### 5.5.3 Training Program

249. Training requirements for the Information Technology staff required to manage the system will depend on the approach adopted for owning and managing the system. Any system management training required will be provided by the system supplier
250. Training for Finance and Accounting Department staff was undertaken by the Consultant in the first weeks of November 2013. Further training will be required in the new and revised financial management processes. Although some training in the new FMIS will be provided by the software supplier, there will still be a need to make sure that staff using the FMIS fully understand the impact of the new system and processes.
251. Examples of topics recommended to be covered by the supplier are as follows:
- The principles and logic underpinning the new coding structure.
  - The need for new processes.
  - The types of new processes, who will be responsible for them, who will be involved in undertaking them.
  - The impact of the new processes on controls over data processing.
252. This training will need to take place early during the FMIS implementation plan.
253. Further training is also required for the managers who will use the information. Courses in Accounting for non-financial managers were run by the Consultant in November and these covered the use of reports from FMIS. These courses were well attended by senior management. Once managers are aware of what can be provided and senior managers start asking for answers, Finance and Accounts will come under increasing pressure to provide help and support to the rest of SRT.

**5.6 CONCLUSIONS**

254. Although the aim has been to fit the management information system to the current organisation structure rather than fitting the structure to the FMIS, re-organisation of accounting functions is necessary if SRT is to get benefit from the new systems. Some reorganisation of the Traffic Business Group should also be considered.
255. Capacity building through training and some selective recruitment will be required to provide the needed management accounting and reporting skills. SRT will need additional assistance through the preparation and implementation phases.

**5.7 CONSULTATION**

256. The need for re-organisation of the Finance and Accounts Division was highlighted during the first presentation to the Governor and Deputy Governors on 7 June 2013 and has been reinforced at subsequent workshops. The subject was covered in a series of training sessions for Finance and Accounting staff and non-finance managers held in early November. The training session participants were asked to complete feedback forms after each of the training sessions. The feedback received supported the need for re-organisation of the finance function with only two participants disagreeing and one 'don't know'.

257. The section of the report covers SRT's needs for additional technical assistance and support during the procurement and implementation stages, including a programme of training in finance and accounting.
258. During the project, the Consultant has provided SRT with a number of workshops, designed to explain and to obtain feedback from SRT on the new and emerging concepts underpinning the design of the FMIS and related issues. The Consultant has also provided all senior management and staff from the Finance and Accounting department with initial training (Effective Finance Function) on the benefits and practical issues relating to the reorganization of the finance function, and deputy governors and senior business unit management with training (Finance for Non-Financial Managers) on the basics of finance and accounting, and how to make use of the proposed management reports. Feedback received from SRT on these workshops and training courses has been very positive.
259. Formal feedback (using feedback forms) was obtained for the two training courses. Participants were asked to state whether the training had contributed to their understanding of issues discussed, and to rate the overall effectiveness of the presenters. For Effective Finance Function, 100% of participants who provided feedback stated that the training had contributed to their understanding of issues discussed, whilst 87% rated the presenters Good or Excellent. For Finance for Non-Financial Managers, 95% of participants who provided feedback stated that the training had contributed to their understanding of issues discussed, whilst 70% rated the presenters Good or Excellent.

## 6.1 FUTURE CAPACITY BUILDING AND TRAINING

260. There is a real need for further capacity building work in SRT, both before and during the FMIS implementation stage, to cement the foundations achieved to date, and to make a significant contribution to the successful implementation of the FMIS.
261. The following areas are proposed for additional technical assistance and training:
- Consultancy during the procurement and implementation of FMIS.
  - Developing a strategic business plan, production of a business planning manual and provision of related training.
  - Restructuring the IT department and developing an ICT strategy and provision of related training
  - Assisting SRT will developing an annual budget using primary and intermediate outputs, production of a budget manual and provision of relevant training. Developing a automated budget model to be used as the basis for production of budgets.
  - Training in financial reporting and Audit.
  - Training in management accounting.
  - Training in financial controls and process design.
262. There are numerous other assistance that can be listed. However the above provide a good preliminary list of technical assistance projects that SRT can benefit from. If requested the Consultant can provide further elaboration of the above in the next revision of the Final Report.

## 7.1 THE TASK

263. SRT faces a difficult future. Lack of investment in the past has left it in an uncompetitive position vis a vis other modes of transport. Even with the anticipated investment by the government in railways it will be difficult for SRT to maintain and increase its market share against low cost airlines, buses and trucks. FMIS will help. By enabling managers to measure the performance of their services, FMIS gives them the information they need to react to the market, adding services or initiatives that make money, reducing services that don't, and negotiating freight contracts that add to SRT profitability.

## 7.2 IMPLEMENTATION

### 7.2.1 Implementation Plan

264. SRT need to move quickly to implement FMIS and achieve its benefits. This TA finishes with the presentation of the final report, specification and bidding documents. The steps needed to implement the project are set out in the Implementation Plan document that accompanies this report as Appendix A.
265. The process starts with the first critical step – the decision to proceed. A briefing paper for presentation to the Commissioners and the Ministers if required to seek their approval is included as Appendix B.
266. Once the decision to proceed has been taken, the steps needed are:
- Project Initiation including appointment of a steering committee, project manager and implementation consultants;
  - Preparatory Activities – reorganization of the Finance and Accounting department, specification of transaction and asset codes, training, etc.;
  - FMIS Procurement;
  - FMIS Deployment.
267. It is proposed that deployment be staged so that core systems and procedures can be tested and accepted before additional functionality is added. The first stage implementation is basically a like for like replacement of the existing system. This will implement the General Ledger, Accounts Payable and Receivable, Fixed Assets and Cash Management.
268. The second stage should implement Payroll (being specified as a separate project) Costing and Budgeting and the Project module. Once these are in place, introduction of the train order, initially on a pilot basis, will enable full transfer pricing and reporting to be implemented.

### 7.2.2 Specification

269. The Consultant has prepared a system specification document which presents the requirements of SRT for the FMIS and a bidding document which sets out the bid procedures for prospective suppliers. The purpose of these documents is to enable SRT to seek technical and financial proposals to supply, install and make operational an FMIS that meets the requirements identified in this project.
270. The specification document includes the following:
- Background to the project and the responsibilities of the supplier;
  - Description of the SRT functions and Departments;
  - High level functional requirements to be met by the systems to be delivered and the architecture of the system required;
  - High level technical requirements to be met the systems and the technical architecture within which the system must operate;
  - Other requirements for training, documentation, licensing etc.;
  - Warranty and post-warranty requirements and services required;

- Supplier qualification requirements, implementation team and support to be provided by the SRT;
- List of expected implementation activities, schedule and deliverables; and
- Description of the format of bids required and a checklist of responsiveness.

271. The specification and bid documents are companion volumes to this report.

### 7.2.3 Implementation Consultants

272. Implementation of a system of the complexity of the FMIS is not something an organisation does often. It would be unreasonable to expect the Information Technology Division to have the necessary experience and skills to undertake the task unaided. Nor is it likely to be efficient to recruit staff for what is expected to be a finite task. SRT thus needs to contract the assistance of a specialist consultant – people who have ‘done it before’ – to guide the implementation process. The consultant role will be to provide project management support to SRT and:

- Advise the team through all stages of the implementation.
- Attend the Steering Committee meetings to provide input to resolving implementation issues and providing direction;
- Ensure that core functionalities required by SRT are implemented in accordance with the specification;
- Review the information provided by the Supplier and oversee supplier activities during the implementation;
- Independently review test specifications and verify satisfactory completion of system tests;
- Ensure that the implementation meets the stated objectives.

### 7.2.4 Estimated Cost

273. The estimated cost of the project is set out in the Implementation plan (Appendix A). The total initial cost for hardware, software system configuration and implementation is 120 Million Baht made up of 40 Million for the operating environment (data centre and hardware) and 80 Million for software and services. The likely ongoing annual operating cost (licenses, system operation and management) is 8.8 Million Baht of which 6.2 Million is software licenses and support.

## 7.3 COMMUNICATIONS PLAN

274. Introducing FMIS requires many changes within SRT and in particular in the Finance and Accounting Department. Even though these changes will improve operations and should increase job satisfaction, because they affect both employees and stakeholders they will give rise to concerns. Until new practices become established, organizational performance may be affected, as employees become accustomed to new ways of performing job tasks and cooperate throughout the stage of changes.

275. The implementation process from conception to completion requires a considerably period of time. To facilitate these changes and achieve the best possible results, a communication plan is needed so that staff and stakeholders are aware of and understand the reason for the changes.

276. The Objective of the communications plan is thus:

- To create awareness and understanding which leads to acceptance of changes in the SRT on the financial and accounting information system
- To achieve the cooperation from employees in the Financial Department and other departments of SRT
- To notify the external stakeholders and the public in general in order to gain trust as well as a favorable corporate image to SRT along the development

277. A draft Communications Plan has been prepared and accompanies this report.

#### 7.4 CONCLUSIONS

278. The first and most critical step to implementation is the decision to proceed. Once this has been taken, an Implementation Committee with appropriate delegated authority should be established. The Committee will need the technical and administrative support of a project implementation unit with full time project manager and specialist advice from an implementation consultant.
279. Implementation then follows four main phases: Preparation, Procurement, Integration and Deployment. It is proposed that deployment be staged with the implementation of transfer pricing dependent on the accumulation of a history of detailed cost data.

#### 7.5 CONSULTATION

280. Consultation on this report, including the Implementation Plan was conducted with senior SRT managers on Friday 6 December during a presentation delivered by Corporate Solutions to some 40 senior staff at SRT.



Title

## FMIS IMPLEMENTATION PLAN

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Authorised

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Date: 27.12.2013

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The authors welcome further discussion of issues raised in this report.

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## 1. INTRODUCTION

1. Implementation of the FMIS represents major challenges for SRT. These challenges include:
  - There are deficiencies in the existing system of financial management reporting in SRT as identified in previous reports. The introduction of FMIS necessitates major changes to how the finance function is currently organised and how it should operate in future.
  - The proposed approach to implementation of FMIS means that the accountants focus more on the quality of data entry, reconciliation and reporting rather than merely processing information. There are gaps in skills that must be bridged through extensive training and staff recruitments.
  - FMIS forms the core of the ERP and in order to gain maximum benefit from its introduction there is need to introduce consistency and sharing of the data that is common between these systems (coding structures). There is also need for integration/interfacing of these systems with FMIS for seamless sharing and transfer of information.
  - SRT has made a number of attempts to introduce computerised systems in previous years with only limited success. A number of information systems have been introduced at departmental level without due consideration to SRT's overall needs and the integration that is required between these systems. SRT lacks the experience in planning and managing the successful implementation of major information systems.
  - SRT lacks the ICT infrastructure to operate and manage major information systems such as FMIS and ERP. The existing data centre facilities are inadequate and there are shortfalls in the organisation and skills of ICT staff that must be bridged through training and recruitment.
2. We have discussed the above issues with SRT during the course of the project and have proposed an approach to managing the introducing FMIS. The task however remains challenging and complex and requires considerable effort and dedication from SRT: Our proposals to minimise risks include:
  - Limiting the initial scope of FMIS implementation and focusing on key functionality that can be implemented and made to work in a reasonable timeframe. Additional functionality can be introduced once SRT gains experience of implementing and working with the system.
  - Embarking on internal projects to review and rationalise processes and accounting coding structures in advance of appointing a supplier for FMIS.
  - Avoid purchasing standalone information systems and to prepare a coordinated ICT strategy and plan the information systems requirements of SRT in an integrated manner.
  - Initiate a programme of training for accounting staff to develop their skills in management accounting and reporting.
3. This appendix sets out an implementation plan showing the steps that SRT needs to take in order to implement the FMIS and the accounting and financial reforms that have been recommended during the project.
4. The key stages for implementing the FMIS include:
  - Project Initiation
  - Preparation
  - Procurement
  - Deployment
5. These above are each described in the following sections.
6. The plan also includes suggestions for phasing the introduction of the design concepts developed by Corporate Solutions to introduce effective costing and transfer pricing in SRT. The objective is to allow time for SRT to become accustomed to the facilities available in the FMIS before implementing the more complex features. The approach requires that the FMIS is designed and configured such that it incorporates our proposed design concepts but that these features are enacted and used by SRT in a phased manner. These phases include:

- Phase 1 - Initial Implementation
  - Phase 2 - Expansion of Functionality
  - Phase 3 - Pilot testing of Transfer Pricing
  - Phase 4 - Roll out of train orders
  - Phase 5 - Full business segment reporting
7. The above phases are described in section 6 and incorporated in the Implementation Schedule in Annex 2.

## 2. PROJECT INITIATION

### 2.1. COMMITMENT

8. The critical first step to implementing the system is the decision to proceed. Given the size of the commitment this decision will be made by the Governor and may need ratification by the Railway Commissioners and the Minister. The level and the source of funding must also be agreed and confirmed. A briefing paper for presentation to the Commissioners and the Ministers has been prepared and is included as Appendix B to the Final Report.

### 2.2. APPOINT PROJECT TEAM

9. It is important that structured team from SRT is appointed to take responsibility for the selection and implementation of FMIS. Figure 1 illustrates the proposed project team. The roles and responsibilities of the project team members are described in further detail in the following subsections.

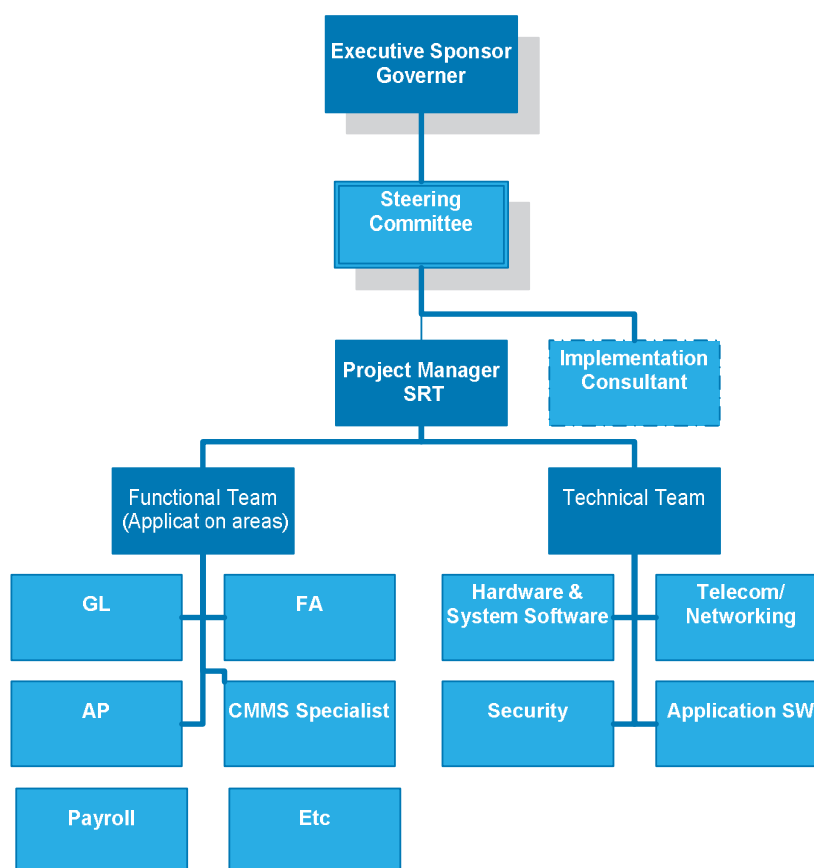


Figure 1. FMIS Project Team Organisation

#### 2.2.1. Executive Sponsor

10. The executive sponsor will be the main point of authority for the introduction of the new system and ultimately responsible for the success of its implementation. The executive sponsor will monitor the project progress through the Steering Committee.

#### 2.2.2. Steering Committee

11. Once the decision to proceed has been made, an implementation committee needs to be appointed. It is proposed that the committee include:

- Deputy Governor (Administration) - Chairman
  - Head of Business Group (Traffic Management)
  - Assistant Governor (Information Technology)
  - Director Finance and Accounting
  - Procurement/contract management specialist
  - Other co-opted persons as required
12. The task of the Steering Committee is to ensure that the preparatory work is undertaken, and that all steps required to procure and implement the system are taken promptly and correctly and generally to guide the implementation process. It will have an important role in approving procedures and resolving inter-departmental issues that are sure to arise. The Committee will also have prime responsibility for the evaluation of the FMIS product during the procurement phase of the system.
  13. The Steering committee will mobilise additional resources during the procurement and implementation of the FMIS.
  14. The Chairman of the committee needs delegated authority to take decisions and commit resources accordingly. The committee should have authority to:
    - Agree internal staff reorganisation plans with relevant department heads
    - Arrange for staff training
    - Procure consultants to assist with implementation
    - Authorise the issuing of bidding documents relating to the FMIS
    - Discuss requirements with interested parties as appropriate and consistent with tendering protocols
    - Conduct a selection process consistent with the tendering process and make recommendations
    - Authorise contractual payments to the FMIS supplier
    - Authorise variations to the contract within prescribed limits
    - Purchase equipment and supplies within an agreed budget
    - Other tasks as delegated.

### 2.2.3. Full-time Project Manager

15. Project management will be a critical activity during the selection and implementation of the FMIS. It is recommended that the day-to-day management of the implementation be the responsibility of a dedicated Project Manager who would report to the committee on a regular basis. The project manager must be appointed full time and provided with sufficient authority to manage the supplier and the implementation of the system. He will be supported by a team of specialist from the key functions and departments as illustrated in Figure 1.
16. Once the supplier has been selected and the implementation work begins, the most important task for the Project Manager will be to ensure that the supplier prepares a detailed Implementation Plan encompassing all activities leading to the acceptance of the system. Having agreed an Implementation Plan, the project manager must ensure that progress is made in accordance with the plan by ensuring:
  - Weekly meetings are conducted with the Supplier and the SRT Implementation Team to review progress against the plan and issues arising. Any issues must be formally documented and their impact on the plan quantified.
  - Staff and resources are allocated from SRT to support to the supplier so that progress can be made. Requirements for any such support have to be elaborated and included as an integral part of the Implementation Plan.

- Inter-relationships between activities and dependencies with other tasks are clearly understood and action is taken to remove barriers to the progress of the GFMIS implementation.
  - Approval is sought from executives of SRT as to any changes to processes and organisation to facilitate the implementation of the system.
  - A monthly Project Status report is prepared and submitted to the Steering Committee.
  - A monthly Steering Committee meeting is arranged to review progress of the project against plan and to approve mobilisation of any additional resources that may be needed.
17. The Project Status report must fully document the progress made with the implementation of the system. It should include:
- Achievements during the reporting period
  - Planned activities for the coming month
  - A summary of issues and approach to their resolution and actions necessary
  - A summary of project risks and mitigation strategy
  - Changes to the Implementation Plan and timing of the project and justification of any such changes
  - A summary of project resources and finances
  - An updated Implementation Plan

#### 2.2.4. Implementation Consultants

18. To undertake the functions described in the previous section, it is important that the SRT appoints a highly skilled project team with experience in:
- Project planning and management
  - Change Management
  - Information systems and technology
  - Railways financial management and reporting
19. SRT does not have all these skills in-house. It is strongly recommended that the SRT appoints independent consultants to assist and advise it on key stages of the implementation. The consultant's role will be to review the information provided by the Supplier and to advise the SRT on all project management, functional and technical aspects of FMIS implementation. In particular, the consultants should independently review test specifications and verify satisfactory completion of system tests.
20. The implementation consultant will work closely with and advise the project manager. The consultant will also attend the Steering Committee meeting to provide input to resolving implementation issues and providing direction.
21. The management of the project will be the responsibility of the SRT team. The role of the consultant will be to advise the team through all stages of the implementation particularly during the design and testing to ensure that core functionalities required by SRT are implemented in accordance with the specification.
22. It is advisable that the implementation consultant is appointed early to assist the SRT during the tendering for FMIS and to provide support and advice during the supplier evaluation and contract negotiation.

#### 2.2.5. Functional and technical teams

23. Following the selection of a supplier, teams must be established from SRT staff to work alongside the supplier and take responsibility for implementation activities. These will include functional teams representing all relevant application areas. The functional teams would be responsible to ensure that the FMIS software is configured appropriately to meet SRT's needs and assist with data migration and testing. Technical teams will also be established to work with the supplier on the technical aspects of

the system including hardware, software and WAN, LAN etc. The functional teams would receive considerable practical and on-the-job training during the implementation of the system and following the implementation of the system will take responsibility for training other staff and supporting and administering the system.,

### 2.3. KEY STEPS

- Obtain authority to proceed
- Establish project team
- Appoint Implementation Consultants

### 3. PREPARATION

#### 3.1. ORGANISATION STRUCTURE

##### 3.1.1. Need for Reorganisation

24. The Consultant recommended that management reporting be structured around the core businesses (outputs) rather than around functions as at present. Such a large change in business focus would normally require significant structural change to the organisation. While the Consultant believes that it would be desirable for SRT to align the organisational structure with the proposed reporting structure over time, it is not essential. The proposed FMIS coding structure is sufficiently flexible to accommodate the present organisational structure as well as possible future developments.
25. The Consultant recommends changes in the organisation of the Finance and Accounting Department and the Traffic Business Unit. Details of the proposed changes and the rationale for change are provided in the Financial Report and summarised in the Final Report. This section describes the steps required to implement the changes.

##### 3.1.2. Finance and Accounting

26. To achieve the benefits of the FMIS, the Finance and Accounting Department needs to embrace the new function of management accounting. The proposed structure and the rationale behind it was presented in the Financial Report. It provides for a new Management Accounting Directorate to undertake the management accounting functions.
27. Management accounting staff will be expected to specialize in particular outputs so that they can better assist the product managers. Existing staff will require training to undertake the new functions. Some recruitment of new people will also be required.

##### 3.1.3. Traffic Business Unit

28. The Traffic Business Unit is currently organised into separate commercial (ie revenue) and traffic (ie operations) branches. The proposed reporting structure is organised by product to enable management by product. Ideally the business unit organisation would be changed to provide the same product focus.
29. The Final Report proposes a structure based on the following products and services:
  - Commercial passenger
  - PSO passenger
  - Parcels
  - Freight Services
  - Stations
  - Train Control
30. An alternative structure for the passenger services has been proposed which would comprise:
  - Intercity
  - Regional
  - Commuter
  - Airport Link
  - Red Line
31. FMIS can support whatever structure SRT decide upon. However this decision should be made before the system is implemented.

##### 3.1.4. Key Steps

32. The following key implementation steps can be identified:

1. Set effective reorganization date. This should probably be the same date as the start of the FMIS implementation.
2. Finalize the organization structure: The new organization structure at division, section, and individual position levels needs to be finalized and approved.
3. Determine staffing levels: At the present time it is difficult to determine the precise staff requirements for the proposed finance and accounting organization, but it is likely that the Accounting staff currently engaged in data processing activities should either be transferred to Financial Control within the Financial Accounting and Reporting Directorate, or transferred to the Management Accounting and Reporting Directorate. Staffing levels in each functional area need to be determined to ensure that resources are sufficient, but not excessive, in all areas, paying particular attention to the new functions of Management Accounting and Financial Control. For the Traffic Business Group, the change will affect reporting lines but should not involve any change in staff numbers or functions except for the first level of management.
4. Finalize job descriptions: Job descriptions in the Finance and Accounting Department should take into account changes to existing internal processes and new processes that will be necessitated on the introduction of the FMIS. They also need to correlate with the timeline for system implementation, so some roles will change and develop as the system implementation progresses. New job descriptions will be needed for the first level of managers in the Traffic Business Unit.
5. Identify recruitment needs and undertake recruitment program: It is recommended that a small number of accountants with experience gained in enterprises that make use of financial control and reporting to management are recruited externally. These individuals should be given responsibility for developing the proposed financial control and management accounting functions within SRT. By appointing new staff early in the process, their knowledge can be used to help guide the subsequent reorganisation and training.
6. Staffing reorganization: There will be change in the skills profile of the staff in the Finance and Accounting department. A skills and experience audit should therefore be completed for all existing staff, and any skills gaps should be identified. The continuing and new positions in the new organization should be distinguished and existing staff should be mapped into future positions, ensuring that SRT succeeds in retaining the maximum number of suitably qualified and experienced existing staff.
7. Identify training needs for continuing and new positions. SRT Finance and Accounting management and senior staff have already been provided with initial training (Effective Finance Function), and some Traffic Business Unit staff have been given training in the use of management reports, but there will be a need for additional training. The individuals recruited by Finance and Accounting should also be able to provide on-the-job training by means of coaching and supervision to both Finance and Accounting and Traffic Business Unit staff.

## 3.2. FINANCIAL MANAGEMENT PROCESSES

### 3.2.1. Process Reorganisation

33. A significant feature of the proposed integrated FMIS is that data will be captured once and is available throughout the system avoiding the need for repetitive manual input to transfer data from one module to another. The system also provides for controls so that transactions entered in the system can be appropriately authorised before they are actioned. The system will have facilities to enable senior finance staff to review and authorise entered transactions eliminating manual processes.
34. Another major change to the processes is that currently the accounting department sorts the transactions but data entry is conducted by the IT department. With the introduction of the new FMIS, the accounting staff will be responsible for entry of the data into the system eliminating the need for unnecessary movement of paper and manual work.
35. These and other facilities available in the FMIS mean that accounting and financial management processes must be substantially revised to ensure efficiency and seamless operation of the FMIS.
36. Major FMIS products are designed based on established business process models. An important system implementation activity is therefore for the supplier to review the existing processes and develop

and finalise a new business process blueprint based on its product defining clearly how information flows through the accounting department and points of data entry and control.

37. The accounting department must therefore brace itself for major changes to how the department is organised and operates. This change has to be carefully planned and managed as it is one of the most critical success factors for the project. For this reason it is very important that the scope of the initial implementation is limited only to a core set of modules allowing time for SRT to adapt to the numerous changes that will come with FMIS before embarking on the introduction of more complex functionality.

### 3.2.2. Information Flows

38. In addition to how the accounting processes are organised, the proposed design necessitate changes to how transactions are sorted and analysed by these processes.
39. One of the critical objectives of the FMIS is to allocate transactions (costs) to activities so as to be able to link revenue and expenditure for individual primary outputs, and in turn to be able to measure, monitor and assess financial performance at the primary output level rather than only at the corporate level.
40. Expenditure can be incurred for three purposes:
  - for general administrative purposes;
  - to create new operating assets; or
  - to provide train services (final outputs).
41. Separating these three types of expenditure is to be achieved by basing the core of the system around five codes, identified as “orders” to allocate the value of an item from its initial purchase through to its ultimate recognition as either an item of expenditure or an asset in the financial statements. The five ‘orders’ are
  - A Purchase Order
  - A Stores Order
  - A Work Order
  - A Train Order
  - A Project Order (the authority to incur expenditure on capital items)
42. How these orders are allocated to transactions is illustrated in Figure 2. The complete process of allocation is detailed in the Financial Report and summarised in the Final Report. From the above list of orders the purchase order, stores order and work order already exist under the maintenance management system (CMMS) currently being introduced in the Operations and Mechanical Engineering SBU.

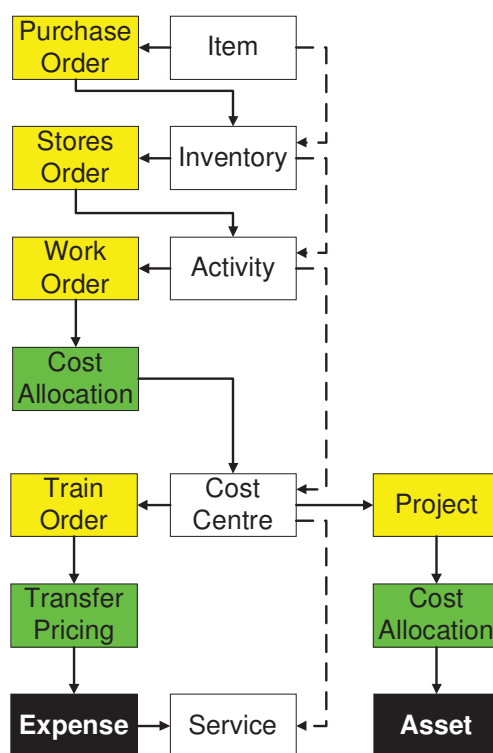


Figure 2. Use of “Orders” to allocate resources to activities, services and assets

43. The key new orders that need to be introduced and implemented are therefore:

- the Train Order; and
- the Project Order.

### 3.2.3. Key Steps

44. The key preparatory steps are:

- For the train order, design of the train order form and introduction of a procedure to record the resources for each train departure
- For the project order, ensuring that each project has a code that uniquely identifies it and finalising the design of the fixed asset coding structure

45. With the introduction of the FMIS, a critical activity will be to rationalise and introduce a range of coding structures to enable appropriate recording and reporting of financial information. Some of these codes are permanent codes that specifically identify items such as an organisation unit, asset etc. Others such as order numbers are codes that are used to allocate costs to a specific activity and/or asset. Financial transactions will include a combination of these codes to ensure that each item of cost and revenue is allocated to a specific organisation unit, activity and/or asset as maybe relevant. The rationale and the proposed design for a coding structure appropriate to SRT has been described in detail in the Financial Report and the FMIS specification. These codes must be introduced consistently – not only in the FMIS but also in other relevant information systems in SRT as the basis for management reporting.

46. Table 1 illustrates the need for consistency by showing the coding structures referenced by each module.

Coding structure	FMIS Modules											Legacy systems			
	GL	A/P	A/R	Cash	FA	Project	Invoice	Payroll	HR	Cost	Budget	Property	P. Order	Inventory	MM
Transaction types	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓
Individual asset codes					✓					✓		✓		✓	✓
Asset class	✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	✓
Network location code		✓	✓		✓		✓			✓	✓	✓	✓		✓
Organization code (profit /cost centres)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Warehouse /depot codes	✓	✓												✓	✓
Activity code (order number)	✓	✓	✓		✓	✓	✓			✓			✓	✓	✓
Chart of accounts	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
AP & AR codes		✓	✓	✓			✓						✓	✓	
Inventory codes	✓												✓	✓	✓
Projects codes	✓	✓		✓	✓	✓					✓		✓	✓	
Employee codes	✓		✓	✓	✓			✓	✓	✓				✓	
Bank accounts	✓	✓	✓	✓											

Table 1. Coding Structures within FMIS Modules

47. Considering the amount of work needed in this area and the time it will take to complete it, it is important that SRT embarks immediately on an internal project to rationalise the coding structures. This process can take place whilst tendering for a FMIS Supplier. Having done preliminary work in this area, SRT can then seek support and assistance from the supplier during the implementation of FMIS to finalise these codes.
48. The relevant codes and action needed are summarised below:

Code	Expected activity
<b>Transaction Types</b>	The Consultant has proposed a list of transaction types in the specification. SRT must review these and ensure that it includes all types of transactions that SRT needs to identify and prepare in advance of FMIS implementation. Upon selection, the Supplier will review the list of transaction types with SRT Project Team and identify any further additions/deletions or refinement that maybe required. FMIS products normally include a list of transaction types as standard based on best practice accounting.
<b>Fixed Asset Codes</b>	This is a critical area and SRT needs to ensure that appropriate asset classes, asset records and values are maintained and available for implementation in FMIS at the start of the project. SRT is likely to require external assistance with finalising the asset register. During the implementation of FMIS, the Supplier must work closely with SRT to transfer the fixed asset records to the new Fixed Asset module.

<b>Asset Classifications</b>	See above.
<b>Network Location Codes</b>	See above. Infrastructure assets, in particular, are associated with a specific location on the railway network and the supplier of the FMIS must agree the division of the network into identifiable sections of track to form the basis of access charging to be incorporated into the system.
<b>Organization Codes</b>	Prior to appointment of a Supplier, SRT must finalise draft coding for the organisation of SRT. Considering that the structure of SRT is unlikely to change to align it with its more closely with the primary and interim outputs, it is important that the coding is done such that organisation units responsible for the outputs are clearly identified. The rationale for this has been explained in other project reports. Following the selection of FMIS Supplier, the Supplier must review, finalise and implement the relevant organisation codes in the system in accordance with the specification.
<b>Activity Codes</b>	These include Purchase Orders, Stores Order, Work Order, Project Order and Train Order. SRT must review how these codes are currently organised and used in the company and if they can support the design principles in our reports. Initial decisions must be made as to how these codes should be structured and organised. These can then be discussed with the supplier of the FMIS who working closely with SRT will finalise the design and implement in the FMIS.
<b>Project Codes</b>	SRT should identify and agree a common set of project types it performs and how these should be coded for identification purposes. The design of these codes must then be finalised in discussion with and by the Supplier and implemented in FMIS.
<b>Chart of Accounts</b>	<p>Changes required to the COA falls under three categories:</p> <ul style="list-style-type: none"> <li>• Elimination of accounts no longer required due to introduction of coding structures such as the organization codes to analyse transactions.</li> <li>• Re-organizing the COA to be more in line with the Thai norms on classifying COA (assets, liabilities, capital, revenue, and operating and admin expenses).</li> <li>• Introduction of new inter-company accounts for revenues, expenses and balances.</li> </ul> <p>SRT must conduct internal rationalization of these codes prior to appointing a supplier.</p>
<b>Inventory Codes</b>	Confirm the details to be kept for each inventory record (i.e. name, type or category, cost centre code, etc.); Propose transition approach for integrating current inventory records to the new system. Ensure that inventory codes are implemented consistently and duplicate records are eliminated.

49. A similar approach must be taken to the following coding structures and prior to implementation of FMIS, SRT must review these codes, rationalise and collate them ready for review by supplier and transfer to the new FMIS. The remaining codes include:
- Warehouse Codes
  - Supplier & Customer Codes
  - Employee Codes

- Bank Accounts

### 3.2.4. Key steps

- Review, rationalise and prepare codes as much as possible prior to selection of supplier.
- Finalise the design and codes in discussion with the Supplier once appointed giving responsibility to Supplier to finalise the codes.
- Implement the codes in the FMIS.
- Introduce the codes consistently in other relevant applications in SRT.

## 3.3. ICT INFRASTRUCTURE AND SUPPORT NEEDS

### 3.3.1. Primary and Secondary Data Centres

50. It is important that the hardware for the new FMIS is kept in a purpose built Data Centre that provides operational reliability. This will include both a primary Data Centre where the main system will be installed and secondary one that will house the hardware required for recovery in case of failure of the primary site.
51. At present, SRT does not have a dedicated data centre. Considering the investment SRT is making in introducing new systems, it is important that appropriate Data Centres are introduced to provide the level of security, reliability and availability that is required for such major systems.
52. In introducing the Data Centres, there are two main options available to SRT. These are:
  - SRT will establish its own Data Centres in its premises.
  - Data Centre facilities are leased from local suppliers where SRT hardware will be located (potentially with other organisations).
53. There will be a need to explore leasing facilities in Bangkok and associated costs to determine the most cost effective solution. SRT is a major organisation with growing needs for major information systems support. As such we recommend that SRT introduce its own data centres to provide it with better flexibility and ease of access – particularly in relation to integration with other systems and connection to communication networks. Data Centres are costly depending on the level of security and reliability needed. Their introduction is normally not recommended for smaller organisations, but SRT can certainly justify owning its own Data Centres given the size of the organisation and its information systems' needs.
54. There is a third option under which SRT procures FMIS as a hosted service. This would mean that SRT would have access to FMIS functionality but the software and its associated hardware would be owned by a third party whom SRT would pay to gain access to FMIS functionality. The Consultant does not recommend this option for SRT on the grounds that SRT is a major organisation and requires full control over its information systems.
55. The key steps for establishing SRT data centres are thus:
  - Corporate solutions to provide estimate for establishing Data Centres in SRT
  - SRT to further confirm the cost with local companies that construct Data Centres
  - SRT to explore options, costs and conditions associated with leasing Data Centre facilities
  - SRT to make a decision on approach to introducing Data Centres
  - SRT to launch a project to introduce Data Centres

### 3.3.2. Local Area Networks

56. Assuming that FMIS will be installed in a Data Centre at SRT premises in its Head Office, the company must ensure that there is appropriate local area network (LAN) in place to provide users with access to the FMIS. A review has to be carried out as to the quality of the LAN cabling and equipment. Unlike the current situation where the IT department undertakes data entry for all financial transactions, in future

transactions will be entered directly into the system and as such appropriate LAN would be needed. The work in this area must not be limited to looking at the requirements for FMIS but for access for SRT's information systems in general including for future systems as they are introduced. The development of the LAN should ideally be addressed as part of an overall ICT Strategy. Such a strategy is yet to be developed.

57. The key steps are thus:

- Review the physical state of the existing LAN
- Review how access to all users of FMIS and in future, ERP can be provided
- Upgrade LAN ensuring there is scope to increase capacity in future

### 3.3.3. System Management and support

58. Following the implementation of the FMIS, SRT will need to have the capacity to operate and maintain FMIS infrastructure and to provide first level support to users. IT staff with appropriate skills will be needed to work with the supplier during the implementation of the system and then take responsibility for managing and administering the system following the implementation. The exact number of staff and the skills required will be defined by the supplier depending on the specific product they offer. This is likely to include staff for the following:

- Hardware maintenance
- Application maintenance and data administration
- Database maintenance and administration
- LAN and WAN specialist
- Network security specialist
- Help desk support specialist

59. SRT can either appoint its own staff for the above or consider the outsourcing of the management and support of the system to a third party service provider. This could well be the supplier of the FMIS itself.

60. Given the current shortage of skilled staff in the company and restrictions on hiring new staff, outsourcing may well be good option for SRT to consider. In any event, SRT must make a decision in this regard prior to commencing the implementation of FMIS so that the appointed staff work closely with the supplier during the entire cycle of implementation and receive on-the-job training.

61. SRT must also appoint a skilled contract manager to coordinate, agree and manage SRT contracts with all suppliers of ICT services.

62. If management of the FMIS were outsourced, it would be important that outsourcing contracts are drafted very carefully to ensure quality and continuity of the service that SRT requires.

63. The key steps are:

- Consider whether to outsource or maintain in house expertise for management and support of FMIS
- Identify and allocate appropriate staff to the task prior to selection of supplier
- Refine the team following the selection of the supplier
- Research outsourcing options
- Finalise outsourcing contract, if this becomes preferred route, prior to FMIS implementation
- Appoint a contract manager for all ICT contracts

## 4. PROCUREMENT

### 4.1. COMPONENTS TO BE PROCURED

1. The core FMIS requires the procurement of the following components:
  - Software Application licenses
  - Licenses for standard and system software required to run the application
  - The central server systems and the networking equipment required to connect the servers to SRT's network
  - Implementation consultancy
  - Training
  - Technical support and maintenance.
2. The System Specification document prepared by the Consultant defines the requirements for the above as the basis for the purchase of the FMIS. SRT will however need to procure additional works and services such as:
  - Data telecommunication networks and service
  - Data centre for the main and disaster recovery centre
  - Hosting services
  - Outsourcing the operation of the systems
  - Hardware including personal computers and peripheral devices.
3. The above items are **NOT** included in the specification document and must be addressed by SRT directly.

### 4.2. STANDARD PROCUREMENT RULES

4. SRT's standard internal procurement rules require that the supplier meet a minimum technical qualification and score in order to qualify for the tender. Qualified bidders are then invited to attend an E-Auction. The maximum price for the tender is announced by SRT and the suppliers bid against each other with the cheapest bid the final winner.
5. The above approach clearly treats all bidders the same from technical point of view providing that they can secure a minimum technical score. This approach is fine when purchasing equipment and software that is standard and can be specified in absolute terms. It is not however the most suitable approach for purchasing FMIS, which combines a number of elements that better suit a more qualitative assessment.
6. An important objective of tendering for a system such as FMIS is to select the best technical solution within an acceptable price range. This may not be possible following SRT's procedures as all bidders will be considered equal technically and the price will be the determining factor.
7. Implementation consultancy and training are normally the most costly components in the procurement of systems such as FMIS. As such a selection method would ideally consider both technical and financial score together in order to reach a final decision and select a supplier. The technical aspect of the bid is normally given a higher weight in order to calculate a final score. Normally a ratio of 60/40 is used for technical/financial evaluation.
8. The Consultant will develop the tender document in accordance with SRT's regulations. The Consultant will however discuss with SRT a more qualitative approach to procurement of FMIS and related services as described in the next section.

### 4.3. A PROPOSED APPROACH FOR PROCUREMENT OF FMIS

9. The proposed approach is based on a combination of technical and financial scores with technical having a higher weight. This is for the following reasons:
  - a) Whilst the basic functionality of the recognised systems is similar, they differ in terms of architecture, the quality of the user interface, ease of implementation, operation and maintenance. Whilst SRT can document its requirements, given the variations in the features offered by different systems, the procurement methodology must also take into account the qualitative aspects of the system that cannot be expressed purely based on listed requirements. GOA must therefore adopt an evaluation methodology that encourages the supplier to propose the best system that meets the requirements rather than the cheapest one. The procurement must also be carried out in stages to ensure that the SRT has the opportunity to examine the features of the system in preparation to final evaluation.
  - b) The capacity, performance and configuration of servers is always driven by application software. The quality of the servers is also a major factor in the quality of the overall system. It is therefore sensible to allow the supplier to propose the most appropriate server for the specific solution. For example Oracle Financials is best run under Sun Microsystems servers. These servers are more expensive than other brands. Cost based evaluation would mean reduced quality and capacity of the servers. It must be noted that whilst high performance servers are expensive, they are not so costly in comparison to licence fees and implementation costs.
  - c) Implementation consultancy is the most expensive and important aspect of the new FMIS. The experience and skills of the supplier staff in implementing the system is the most important factor for successful implementation. SRT must aim to select the most capable supplier and must not base its selection purely on price.
10. Based on the above, the proposed approach adopts an evaluation methodology with higher technical weight than financials. The weights that are normally used include 80%-20% or 60%-40% respectively.
11. The proposed tendering approach is also in stages to enable SRT to adequately assess the suppliers and their offering. The Tender should include the following steps:

#### **Prequalification**

This is an important step to enable the Purchaser to refine its procurement strategy by developing a better understanding of the supplier market that can serve Thailand. The purpose of this stage is to publicly invite suppliers to express interest in the project. The Prequalification must be kept simple and focus on collecting key information from the suppliers regarding their products and services. During this stage the Purchaser can also publish a brief statement of its key requirements as well as specific qualification criteria. The information collected from the suppliers during this stage will help Purchaser to refine its requirements to promote better competition, as well as preparing only a shortlist of suppliers who will be invited to submit a full proposal.

#### **First Stage Tender**

During this stage, the short-listed suppliers will be requested to submit a full Technical Proposal (no financial proposal) for evaluation. Technical evaluation must consider and score the following criteria:

- Functional
- Technical
- Vendor
- Approach
- Training
- Staff
- Demonstrations
- Site Visit

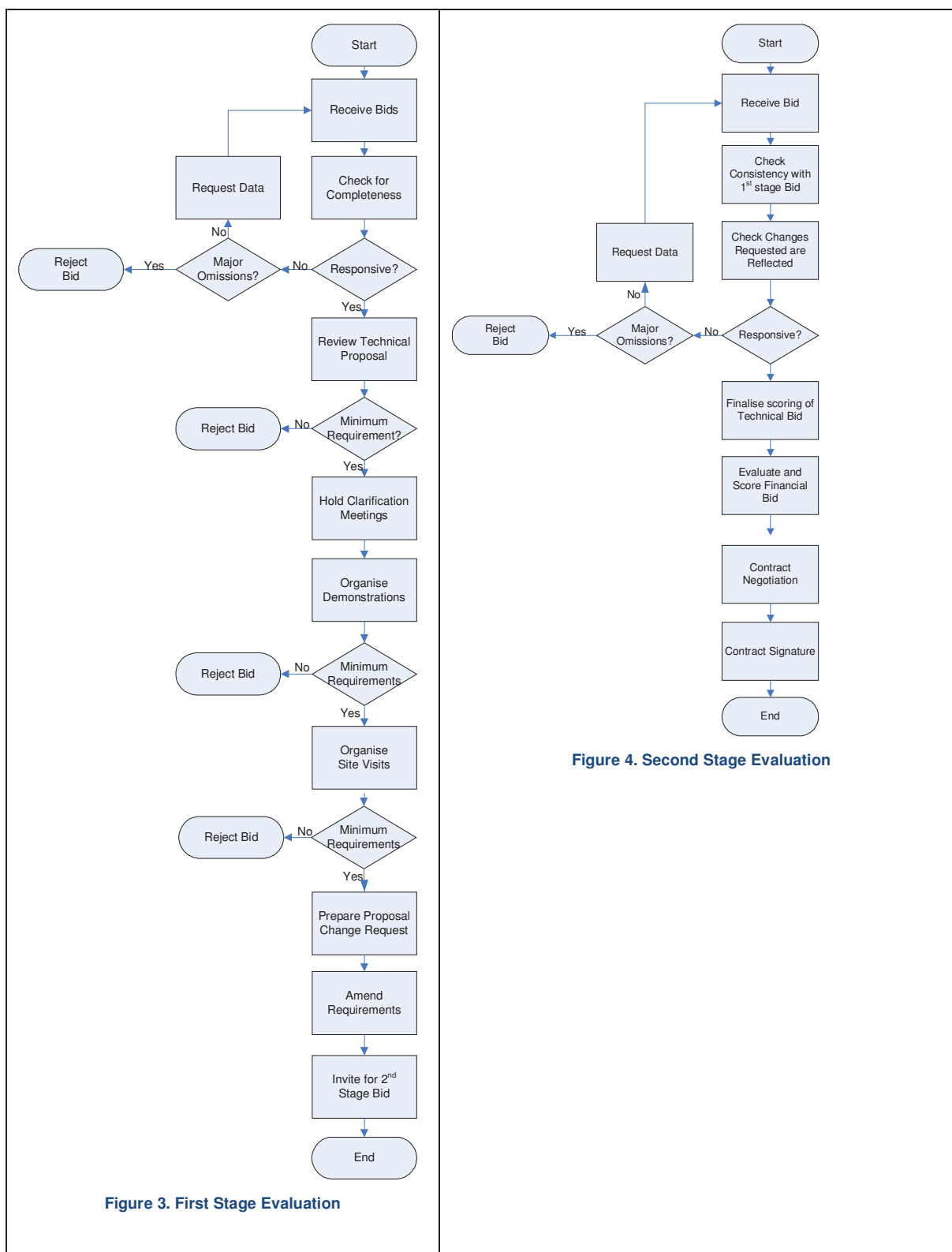


Figure 3 shows the steps necessary to complete the technical evaluation.

Following the completion of the First Stage evaluation the following actions will be taken:

1. Finalising a technical score for each Bidder.
2. Bidders not meeting the minimum technical criteria will be rejected and refined shortlist for Second Stage Tender will be prepared.
3. Memorandum of specific changes to proposals will be prepared and communicated with the Bidder.
4. Refined requirements will be prepared and issued to Bidders.
5. Formal invitation of Bidders to Second Stage Tender.

**Second Stage Tender** The Bidders will be asked to submit a revised Technical Proposal as well as a Financial Proposal. The evaluation during this second stage will be simplified and focus mainly on ensuring that the changes agreed during First Stage Tender are reflected in the Technical Proposal and conducting an evaluation of the Financial Proposal. Figure 4 shows the steps included in the second stage evaluation.

#### 4.4. INCLUSION OF HR AND PAYROLL IN FMIS TENDER

12. SRT is currently in the process of developing a specification for HR and Payroll systems. SRT wishes to combine the purchase and implementation of these systems with the tender for FMIS and has requested support from the Consultant to achieve this.
13. It is the responsibility of SRT to develop the specification of HR and Payroll and the role of consultant is to advise SRT as to how to combine these in the tender for FMIS. At the time of writing this report, the Consultant has not seen the specification for these systems and it is understood that these specifications are being developed. Combining these systems requires a high level of consistency in how the specifications and the tender documents are developed. Considering the tight deadlines for finalising bidding documents for the FMIS, the Consultant proposes the following approach:
  - The Consultant will finalise the specification of FMIS and provide a copy to SRT as soon as possible. SRT will use this as a model to ensure that specifications for the HR and Payroll follow a similar style and approach.
  - The Consultant will finalise the tender document for the FMIS and submit to SRT.
  - In parallel the Consultant will advise and support SRT to reflect the specific qualification requirements, terms and conditions for HR and Payroll systems in a combined tender document.
14. The above approach enables the Consultant to meet its deadlines under the contract and at the same time support SRT in developing a combined tender.

## 5. FMIS DEPLOYMENT

15. Figure 5 illustrates an outline of the stages envisaged for implementing the new FMIS.

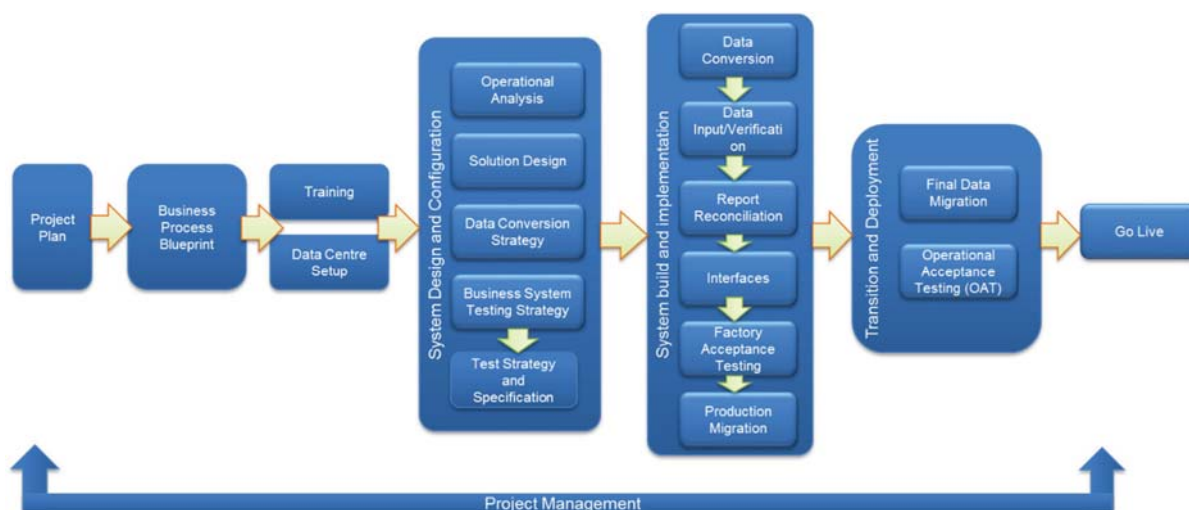


Figure 5. Outline Implementation Activities

16. The timetable for the completion of the activities are summarised in the table below.

Ref	Implementation Task	Site	Completion Date	Mile-stone
1	<b>Implementation Plan</b>	SRT	M 2	<b>YES</b>
2	<b>Prepare Training Programme</b>	SRT	M 2	
3	<b>Finalise Business Process Blueprint</b>	SRT	M 7	<b>YES</b>
4	<b>System Design and Configuration</b>	SRT	M 7	
5	<b>Introduce primary and secondary data centres</b>	SRT	M 7	<b>YES</b>
6	<b>Training Delivery</b>	SRT	M 10	<b>YES</b>
7	<b>Implementation and migration</b>	SRT	--	
a)	Develop data migration strategy		M 4	
b)	Data Conversion		M 10	
c)	Data Input/Verification		M 10	
d)	Report Reconciliation		M 10	
e)	Interfaces		M 10	
f)	Develop Test Strategy and Specification		M10	
g)	Factory Acceptance Testing		M13	
h)	Production Migration		M16	<b>YES</b>
8	<b>Transition and Deployment</b>	SRT	--	
a)	Final Data Migration		M16	
b)	Operational Acceptance Testing (OAT)		M18	<b>YES</b>
9	<b>System "Go live"</b>	SRT	M19	<b>YES</b>
10	<b>Documentation</b>	SRT	M16	<b>YES</b>
11	<b>Post Implementation Review</b>	--	M24	--

Table 2. Implantation Schedule

17. Detailed description of the implementation activities are provided in the FMIS specification and are therefore not repeated here. It is very important that an Implementation Plan is prepared at the start of the project detailing approach and outputs to all project activities from the outset. The plan must as minimum address the following:

- Project Organization and Management Plan
- System Design and Application Customisation Plan
- Business Process Change and Adaptation plan
- Delivery and Installation Plan

- Training Plan
  - Pre-commissioning and Operational Acceptance Testing Plan
  - Warranty Service Plan
  - Task, Time, and Resource Schedules
  - Management reporting and risk management procedures.
  - Post-Warranty Service Plan
  - Technical Support Plan
18. SRT must ensure that the plan is appropriate and takes into account the circumstances of SRT prior to approving the plan. The implementation of FMIS in SRT will be more complex than usual system implementation projects. This is due to the following:
- Transfer of data entry to the accounting department and changes to information flows to capture the proposed coding structure will substantially change the financial business processes in SRT. These changes must be carefully considered and introduced. It is paramount that SRT develops a clear understanding with the Supplier as to the changes required and that a change management plan is in place to manage the change process.
  - There is need for interfacing FMIS with other systems in SRT. These other systems themselves will need to be modified to incorporate the proposed designs and coding structures. The FMIS Supplier must work closely with various departments to ensure interfaces are carefully designed, agreed and implemented.
  - There is need to substantially review the existing coding structures to transfer to the new systems such as fixed assets codes and to finalise the physical design and implementation of other coding structures for analysing transactions. Unless SRT can complete most of this work prior to the implementation of the system, then there is much work that the Supplier has to do to finalise these codes.
19. Whilst the Supplier bears the responsibility for much of the implementation work, SRT management must have clear understanding as to the objectives of the FMIS implementation and the new costing and management reporting approach that must be supported by FMIS. This is critical in ensuring that the plans prepared by the Supplier can meet the strategic objectives of SRT.
20. The timing of the implementation activities are included in the project schedule in Annex 2.

### 5.1. SYSTEM INTEGRATION/INTERFACING

21. The FMIS must be integrated/interfaced with other information systems. Ideally there should be full integration with some of these systems and where full integration is not possible then interfacing should be provided through regular exchange of information.
22. Details of the integration and interfacing between the FMIS and other information systems is provided in the FMIS Specification and summarised below.

#### 5.1.1. Systems to be integrated

23. Some of the existing and planned information systems are closely aligned with FMIS. Close integration would be important for the following reasons:
24. Seamless flow of information eliminating the need for multiple re-entries of the same data. Examples include the sharing of information between Purchase Order Processing and Accounts Payable.
25. Ability to drill down to detail. If systems are integrated, it would be possible to drill down from summary to detail. For instance by clicking on a cost item held in the General Ledger, it would be possible to view invoice, purchase order and specific items of inventory to which the cost relate.
26. Changes in on system will be immediately reflected in the other systems. This includes any changes to the transaction codes.

27. There are substantial benefits to integration. However the cost of achieving full integration should be balanced with the benefit that accrue as integration between incompatible application can be very costly.
28. The main information systems that are candidates for full integration include:
  - Maintenance Management System
  - Purchasing
  - Inventory
29. Normally there is close integration between POP, Accounts Payable and Inventory and these applications are always purchased as part of the same software.

#### 5.1.2. Systems to be interfaced

30. These include feeder systems from which information must be regularly transferred to FMIS. As well as the coding structure being consistent within the FMIS, it is vital that the feeder systems are configured so as to interface appropriately with the coding structure of the FMIS. The systems that must be interfaced with the FMIS include:
  - STAR 2 Ticketing
  - Airport Link (SAP)
  - E-Auction (Government)
  - GFMIS Treasury (Government)
  - Parcels Invoicing
  - Property Management System
31. Once the design of the coding structures are agreed and finalised with the Supplier, SRT must insure that budgets are prepared such that they can be analysed using the same coding structures. Once completed, the budgets can then be transferred manually (or using Excel) to the General Ledger module in the FMIS and used as the basis for management reporting. Once the initial implementation of FMIS has been completed and following a comprehensive review of SRT budget management procedures, consideration should be given to procuring budgeting software to interface with the FMIS. At this point this cannot be justified as it would complicate the implementation of FMIS and the budgeting process must be reviewed and updated in line with the proposed management reporting structures before it is specified.

#### 5.2. FMIS TRAINING

32. The details of the training required are provided in the FMIS specification. Training will be required for the following groups of users:
  1. GROUP 1 - Executive and Managers
  2. GROUP 2 – FMIS End Users
  3. GROUP 3 - Technical Support Staff

The types of the training that is required include:

1. Overview of the FMIS
  2. Change management & Implementation
  3. FMIS Application training
  4. System Administration
  5. Maintenance and Support
  6. Train – the – Trainer
33. The supplier must provide detailed description of the training they will provide in their proposal. Further details of the training and a schedule for its delivery must be prepared by the supplier and approved by

SRT at the start of system implementation. The training must be provided early during implementation to develop the skills of staff working on the implementation of the system.

### 5.3. ROLLOUT OF CMMS TO OTHER OPERATIONS

34. CMMS is currently being implemented in the Bangkok Makasan mechanical depot. Following the successful implementation of the system it is important that CMMS is rolled out to all mechanical depots and engineering departments including Infrastructure 1 & 2 so that maintenance costs are adequately recorded, analysed and reflected in FMIS across SRT.

## 6. PHASED IMPLEMENTATION

### 6.1. PHASE 1 – INITIAL IMPLEMENTATION

35. It is proposed that the first stage implementation is limited to the following:

- General Ledger
- Accounts Payable
- Cash Management
- Fixed Assets Register
- Accounts Receivable
- Consolidation
- Budgeting Support
- Reporting module

36. If possible, these modules would be interfaced from day 1 with the externally managed STARS II ticketing and reservations system and the Mechanical Unit's Maintenance management system (MMS). It may not be cost effective to implement an electronic interface with the payroll system until the new system is available.

37. Acceptance testing will be conducted for the initial modules and the interfaces. At the time this report was written, there were still some issues with the CMMS. Hopefully these will be resolved before the FMIS is ready to go live. Interfacing with the new FMIS will raise some new issues, but these should be easier to resolve than interface with the old system.

38. Note there will be no transfer pricing at this stage. CMMS work orders that allocate wages to activities will be accommodated by setting a standard charge for labour and using a suspense account to which payroll costs will be debited.

### 6.2. PHASE 2 – EXPANSION OF FUNCTIONALITY

39. Once the CMMS interface is working satisfactorily, the CMMS module can be extended to Infrastructure 1 and 2. It is anticipated that the same modules and work order processes will be able to be used. However tailoring of the modules to meet the requirements of Infrastructure 1 and 2 will be required.

40. The following modules will be added:

- Project Accounting
- Invoicing
- Cost Accounting

41. Payroll is critical before any further development is possible. This is because the credibility of the system depends on being able to measure and explain variances between wages paid and wages allocated or charged. This has to be done by classification and location and the current payroll is not up to the task. Introduction of new Payroll and Human Resources modules is being pursued under a separate project. The requirements for integrating Payroll with FMIS are specified in the Implementation Plan.

42. There is still no transfer pricing at this stage but SRT will be able to start to use the costing module to calculate what the transfer prices will be.

### 6.3. PHASE 3 - PILOT TESTING OF TRANSFER PRICING

43. Once integration with Payroll is in place and SRT has been able to establish standard costs for intermediate products, implementation of the train order can be pilot tested. This should initially be for a

limited number of Bangkok based Special Expresses. It could then be extended to Bangkok Commuter trains and Laem Chabang Container services.

44. At this stage the train order may be created and input manually but the aim should be to make this part of the business process.
45. Reports would be able to be generated for the pilot services. Other reports can be validated but would be incomplete.

#### **6.4. PHASE 4 - ROLL OUT OF TRAIN ORDERS**

46. Once pilot testing is producing consistent results and the new train order concept is working, it should be possible to introduce computer generated train orders, first for Bangkok and then for other depots.
47. Note that until all train orders are in place – either computerised or manually prepared and input – transfer pricing and variance reporting will work for individual trains that are 'on line' but would not give complete results for supplier business units. The reports for intermediate outputs can be run and checked by F&A but only the expenditure report should be given to managers.

#### **6.5. PHASE 5 - FULL BUSINESS SEGMENT REPORTING**

48. Once train orders are in place, full transfer pricing can be implemented across SRT. The business segments can then be treated as separate companies with own assets, liabilities, income and expenses and their performance separately planned and measured.

## 7. PROJECT MONITORING & REPORTING

### 7.1. PROJECT MANAGEMENT

49. Apart from the specific managerial and technical skills and expertise required from the Project Manager, he/she must possess good people and change management skills. Resistance to change is often the biggest cause of failure of information systems projects. The introduction of FMIS has significant and far reaching impact on all aspects of SRT's operations. Introduction of new technology has a learning curve and unless managed effectively will face resistance.
50. The introduction of the changes needed requires an organisation to manage the change process, a plan to guide the activities and external technical assistance to provide expert input on specific subject areas.
51. Change management is the process and techniques to manage people side of business change in order to achieve the desired outcome. This is of particular importance in SRT given that the new FMIS will necessitate new approach to recording and reporting financial information. The key strategies to be adopted for successful change management include leadership, involvement, flexibility, accountability and support. It will be the Project Managers responsibility to plan and implement these strategies to deal with the implementation issues as they arise. Following is a brief description of these strategies:

<b>Leadership</b>	Leadership is required from both the executives who promote and sponsor change as well as those senior managers who lead the process. The executives must have a clear vision of the change needed, be persuasive and be knowledgeable about the change required. They will have the necessary authority to alter policy. The senior managers leading the change process require strong organisational, personnel and communication skills combined with an in-depth understanding of the specific areas of change, which range from organisational, human resources and finance to IT.
<b>Involvement</b>	It is critical that everyone affected by potential change be involved in the transition. For change to be successful, SRT's internal and external stakeholders must be kept well informed of the change process and through seminars and workshops should be given the opportunity to provide opinion and input. The Communication Plan provides further details of the proposed approach to communication.
<b>Flexibility</b>	All projects face problems, critics and cynic challenge. After the initial launch, interest can fade, resources get diverted and deadlines slip. Often projects could be viewed as failed in the middle of implementation. Managers must be aware that circumstances and assumptions do change and must maintain the flexibility required to overcome obstacles, incorporate new ideas, uncover alternative solutions and encourage progress. Plans and schedules outlined at the beginning of a project may have to be changed or even ignored. Change can never be fully controlled but must be managed.
<b>Accountability</b>	People in general are resistant to change and staff constantly seek the comfort of familiar. Change becomes incorporated only when there is accountability. Everyone must know what is expected of them in the new environment and know specifically how to meet those expectations. To hold staff accountable they should be trained and educated in their respective areas. Their achievements must be recognised and rewarded. Accountability starts with the leaders of change and the change stops if the leaders do not demonstrate the same level of commitment they expect from others.
<b>Support</b>	The process of change must be supported both by the technology (FMIS) enabler as well as by consultants providing specialist input and support. Consultants not only can deliver perspective, they can also provide insight into what is possible, based on their knowledge of how change was achieved elsewhere.

52. Finally given the lack of experience in SRT of projects of this nature, scale and complexity, it is advisable that the SRT selects and retains independent Consultants through every stage of the selection and implementation of the FMIS to provide ongoing advice and injection of expertise as well as providing project management support.

## 7.2. PERFORMANCE MEASUREMENT AND MONITORING

53. Performance measurement and monitoring in the context of the Implementation Plan relates to evaluating the benefits from SRT's investment in the FMIS. There is no single methodology for evaluating investment in IS/IT and there are a number of theories on the subject. What all these theories have in common is the acknowledgement that there is not a single approach that can be applied to all organisations and that the return on investment should be measured on the basis of a diverse set of parameters, many of which are not tangible. In commercial organisations it is sometimes easier to measure the return, given that introduction of a new system is expected to result in increase in turnover or efficiencies that have material impact. However in an entity such as SRT, such parameters may not be readily applicable.
54. SRT's performance is currently measured in terms of its performance against Government set revenue, expenditure and investment targets. The FMIS by itself will not affect this; however the implementation will provide SRT with an opportunity to produce more effective financial plans and budgets, and in turn more effective management reports that assess and provide the basis for improving the performance of individual business segments. As SRT's financial and management reforms continue, the FMIS will increasingly play an important role in providing the quality of information necessary as the basis for strategic planning and decision making.
55. For the FMIS implementation itself, the following performance indicators are suggested for SRT:
  - Availability of financial analysis and reports (business unit coverage).
  - Time taken to prepare a monthly management report including comparison against last year and budget, preparation of commentary explaining variances, discussion with business management and approval.
  - % of total Department time spent by staff engaged in inputting and processing transactions (including financial control).
  - % of total Department time spent by staff engaged in financial reporting.
  - % of total Department time spent by staff engaged in management accounting and reporting.
56. To measure the achievements effectively, a measure of the above items where applicable should be taken prior to FMIS implementation, and then measured regularly (3 or 6 monthly) thereafter.

## 7.3. CRITICAL SUCCESS FACTORS

57. There are risks inherent with all system implementation and the change process. The success of the FMIS project is dependent on identifying these risks early and managing them. Effective project management and a dedicated skilled team are prerequisite to successful implementation. Following are list of factors that we believe are key to the success of the FMIS implementation:

### Preparation:

- Support and commitment of the Governor and SRT senior management.
- Clearly defined project objectives.
- Full time project management.
- Institutional capacity and availability of staff and resources.
- Maximizing use of external assistance.
- Awareness raising and consultation amongst all SRT business units and departments.
- Securing funding.
- Identifying a dedicated team and allocating responsibilities.
- Understanding the requirements and agreement amongst key stakeholders.

- Pragmatic and realistic timescales.

### Procurement

- Agreeing a clear strategy for the purchase of the system and selecting an appropriate procurement methodology to give the best balance between cost and quality. The methodology has to be clear, transparent and communicated with the supplier.
- Adherence to the defined methodology.
- Developing knowledge of the suppliers and products prior to the issue of invitation to bid.
- Selecting an evaluation committee representing all the functional and technical areas of the system including an experienced non-voting facilitator as a member of the Evaluation Committee. Including independent non-voting observers in the committee from user departments and the Government and/or other stakeholders.
- Preparing a defined and transparent time-plan for decision making.
- Detailed assessment of the suppliers and their offerings not just based on proposals but through interviews, demonstrations and site visits.

### Implementation

- Professionalism, dedication and willingness to change by team members.
- Taking charge and ownership of the project and not relying solely on the supplier.
- Ensuring that design proposals are not implemented unless fully understood.
- Allocating responsibility and holding team members accountable.
- Working as a team.
- Plan adequately and allocate sufficient and good quality resources.
- Meet regularly to review progress and take action to resolve problems.
- Use of best practice project management techniques.
- Conduct periodic independent technical audits.

## 7.4. ISSUES AND RISKS

58. The principal potential risks and recommended mitigation actions are as follows:

Potential risk	Recommended mitigation actions
Establishment of working group delayed and/or working group fails to agree on necessary recoding of transactions.	The FMIS should not be implemented until all transaction coding has been agreed and approved.
Difficulties in commissioning necessary reconfiguration from owners of STARS II ticketing system. Issues could be technical and/or financial.	As soon as the FMIS specification has been finalised, it should be provided to the STARS owners, and discussions held about the necessary reconfiguration. This should be a key topic for the working group.
Difficulties in reconfiguring other feeder systems.	Four feeder systems (Payroll, Ticketing, Costing and Budgeting) have been identified as critical to implementation. The work required should be considered by the working group. The FMIS should not be implemented until all required feeder system interfaces have

	been fully configured.
Failure to organize sufficient and/or adequate training for staff, leading to frequent errors and other misunderstandings.	The FMIS should not be implemented until it has been confirmed that staff are ready.
Failure to allocate work properly between staff, leading to some members of staff being unable to cope with their workloads.	Staff workloads should be considered carefully, and monitored following implementation.
Financial management processes that appeared adequate prior to implementation, fail to work properly.	All new and revised financial management processes should be carefully monitored.

59. The issues likely to arise on the implementation of the reorganization of the Finance and Accounting Department are explained above. The principal potential risks and recommended mitigation actions are as follows:

Potential risk	Recommended mitigation actions
Failure to get sufficient backing from senior SRT management. Objectives of reorganization are not properly understood leading to delays.	Assemble implementation team as early as possible, and provide appropriate leadership, recommended candidate for chair is Deputy Governor, Strategy and Administration.
Failure adequately to communicate objectives and benefits of reorganization internally within SRT.	Allocate responsibility for internal communications to individual member or reorganization team. Comply fully with Communications Plan (produced by Consultant as part of Final Report).
Failure to coordinate departmental reorganization with system implementation. If departmental reorganization lags system implementation, risk that management reports will not be produced and business segment management will fail to obtain benefits from the new system. If departmental reorganization is ahead of system implementation, risk that new Management Accounting Division will not have the information required to produce proposed business segment management reports.	There should be a single implementation plan covering all aspects of required changes.
Staff resistance to changes.	Explain benefits of reorganization in personal as well as organizational terms, such as more interesting work, work with added value to organization, more opportunities for career progression.
Lack of suitable staff for recruitment.	Use external recruitment agency if necessary to assist with recruitment.
Delay in organizing retraining and/or insufficient time provided for retraining.	Training needs to be clearly established as activity in implementation plan.
Failure fully to understand new business processes and procedures.	Additional training.

This annex contains the estimates of costs for the FMIS. The estimates include both the cost of supply and installation as well as the cost of ownership over a period of 6 years. The estimates are developed using a parameterised excel model that will be made available to SRT to continue refining the estimates and consider different scenarios.

Summary Cost Estimates - FMIS System - SRT Cost Estimates									
FMIS System - Cost Estimates		Investment USD	Annual Recurrent	System Ownership- over the years					
Item				Y1	Y2	Y3	Y4	Y5	Y6
Operational Environment (HW)		1,293,390		905,373	388,017	-	-	-	-
Software solution (The system)		2,514,850		1,760,395	754,455	-	-	-	-
Other costs		-		-	-	-	-	-	-
<b>Total Implementation Costs</b>		<b>3,808,240</b>		<b>2,665,768</b>	<b>1,142,472</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Annual Recurrent Costs</b>			<b>285,781</b>	<b>32,110</b>	<b>32,110</b>	<b>231,693</b>	<b>285,781</b>	<b>285,781</b>	<b>285,781</b>
<b>Total FMIS Costs</b>		<b>3,808,240</b>	<b>285,781</b>	<b>2,697,879</b>	<b>1,174,583</b>	<b>231,693</b>	<b>285,781</b>	<b>285,781</b>	<b>285,781</b>
FMIS System - SRT Cost Estimates									
SYSTEM IMPLEMENTATION COSTS		Investment USD	System Implementation- over the years						Total
Item			Y1	Y2	Y3	Y4	Y5	Y6	
<b>Operational Environment (HW)</b>									
Computer Data Centres - Main Centre		417,858	292,501	125,358	-	-	-	-	417,858
Computer Data Centres - Disaster Recovery Centre		199,432	139,602	59,830	-	-	-	-	199,432
LAN and cabling		-	-	-	-	-	-	-	-
System HW Configuration - MC		312,800	218,960	93,840	-	-	-	-	312,800
System HW Configuration - DRC		297,300	208,110	89,190	-	-	-	-	297,300
Workstations and Peripherals		66,000	46,200	19,800	-	-	-	-	66,000
<b>Sub Total</b>		<b>1,293,390</b>	<b>905,373</b>	<b>388,017</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,293,390</b>
<b>Software solution (The system)</b>									
Software licences		337,000	235,900	101,100	-	-	-	-	337,000
System Software and Technology Licenses		282,650	197,855	84,795	-	-	-	-	282,650
Consulting-Implementation Services		1,322,000	925,400	396,600	-	-	-	-	1,322,000
Change Requests during the first year*		132,200	92,540	39,660	-	-	-	-	132,200
Technical Support - for the System		-	-	-	-	-	-	-	-
Training		173,000	121,100	51,900	-	-	-	-	173,000
Interfaces to 3rd Party systems - Lump sum effort		268,000	187,600	80,400	-	-	-	-	268,000
<b>Sub Total</b>		<b>2,514,850</b>	<b>1,760,395</b>	<b>754,455</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,514,850</b>
<b>Other costs</b>									
Telecomm costs		-	-	-	-	-	-	-	-
<b>Sub Total</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Implementation Costs</b>		<b>3,808,240</b>	<b>2,665,768</b>	<b>1,142,472</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3,808,240</b>
SYSTEM RECURRENT COSTS		Maintenance Annual	Post Warranty - Maintenance						Total Maintenance
Item			Y1	Y2	Y3	Y4	Y5	Y6	
<b>Operational Environment (HW)</b>									
Computer Data Centres - Main Centre		20,078	20,078	20,078	20,078	20,078	20,078	20,078	120,470
Computer Data Centres - Disaster Recovery Centre		12,032	12,032	12,032	12,032	12,032	12,032	12,032	72,192
LAN and cabling		-	-	-	-	-	-	-	-
System HW Configuration - MC		25,024	-	-	-	25,024	25,024	25,024	75,072
System HW Configuration - DRC		23,784	-	-	-	23,784	23,784	23,784	71,352
Workstations and Peripherals		5,280	-	-	-	5,280	5,280	5,280	15,840
<b>Sub Total</b>		<b>86,198</b>	<b>32,110</b>	<b>32,110</b>	<b>32,110</b>	<b>86,198</b>	<b>86,198</b>	<b>86,198</b>	<b>354,926</b>
<b>Software solution (The system)</b>									
Software licences		67,400	-	-	67,400	67,400	67,400	67,400	269,600
System Software and Technology Licenses		62,183	-	-	62,183	62,183	62,183	62,183	248,732
Consulting-Implementation Services		-	-	-	-	-	-	-	-
Change Requests during the first year *		-	-	-	-	-	-	-	-
Technical Support - for the System		70,000	-	-	70,000	70,000	70,000	70,000	280,000
Training		-	-	-	-	-	-	-	-
Interfaces to 3rd Party systems - Lump sum effort		-	-	-	-	-	-	-	-
<b>Sub Total</b>		<b>199,583</b>	<b>-</b>	<b>-</b>	<b>199,583</b>	<b>199,583</b>	<b>199,583</b>	<b>199,583</b>	<b>798,332</b>
<b>Other costs</b>									
Telecomm costs		-	0	0	0	0	0	0	-
<b>Sub Total</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Maintenance Costs</b>		<b>285,781</b>	<b>32,110</b>	<b>32,110</b>	<b>231,693</b>	<b>285,781</b>	<b>285,781</b>	<b>285,781</b>	<b>1,153,258</b>
<b>Total FMIS Costs</b>		<b>3,808,240</b>	<b>285,781</b>	<b>2,697,879</b>	<b>1,174,583</b>	<b>231,693</b>	<b>285,781</b>	<b>285,781</b>	<b>285,781</b>

## BASIS OF ASSUMPTIONS USED IN ESTIMATES

## Operational Environment (HW)

## General Assumptions

Cost estimates for the project budget shall cover the implementation costs + 2 years maintenance for SW and 3 years for HW  
The client is to bear the costs of maintaining the system for the post warranty period.

Computer Data Centres		QTY		
One server machine room used by all departments in SRT		1		
Data Centre Assumptions				
Feasibility Study, survey and Design	25%	Percentage of Physical Building costs		
Base building shell and physical security	2,000	per m2. Assumed improvement to existing building. New construction USD 2000-3800		
Fire suppression and detection equipment and installation	300	per m2. Procurement and instalation of fire protection systems		
Building permits and local taxes	5%	Percentage of Physical Building costs		
Data center infrastructure (mechanical and electrical)		Computer equipment Load per KW. Used all HW units @ 1KW		
Network cross-connect fees		Network connection cost, putting in fibre optic. Or leasing Network. Assumed existing		
Monthly lease payments		Payment of lease for the Datacenter per IT Load /KW. Not used for internal DC		
Power consumption		IT Load in KW, times 24hr / 365 days. Cost used: USD for KWh		
Data center staffing		Staff to suport, maintain Data centre. Assumed Hrs per year		
LAN and cabling				
% LAN network to be installed	0%	* Assumed that existing LAN are adequate		
System HW Configuration				
Application and Database servers	for Main Computer room and DRC			
Backup servers	- // -			
SAN Storage Server and network swithces	- // -			
Server Rack with UPS and Console	- // -			
Network Switches to connect System Servers to existing network	- // -			
Other equipment necessary for conecting and operating the system	- // -			
Developmet, Training and Testing server	Only main computer room			
Additional Air conditioning for Data Centres	existing equipment is adequate			
Central switches for network				
UPS for Data Centres	one 40-60 KVA UPS			
HW discount on listed prices	20%	NOT used in estimates		
Annual Maintenance for HW	8%	*3 years warranty included in price		
User Numbers and Accounting Locations				
User numbers				
Organisation Type	Users	Access via		Sites
	Total	LAN	Wan	Total
SRT - Head Office (Senior Managers and Department Heads)	40	40		40
Accounting department	70	70		70
Mechanical	10	10		10
Infrastructure 1	5	5		5
Infrastructure 2	10	10		10
Traffic	10	10		10
Property Department				-
Other (IT department, and admin)	5	5		5
				-
TOTAL	150	150	-	150
Workstations and Peripherals				
% New workstations required	0%	*No new workstations required		
UPS for Critical Workstations (Key users)	0%	*No new UPS required		
Printers - A4 Standard Monochrome Laser Per User	-	*No new Printers required		
Printers - Multiple Sheet Impact Per User	-			
Annual Maintenance for Workstations and Phriperals	8%	3 years warranty included in price		

Software solution (The system)								
Software licences								
I - One –off fee for implementation and customisation								
License Fees - Core Financial Modules	Budget	* No assumption for Min - Max range						
License Fees - Project Accounting Modules	2,300							
License Fees - Business Intelligence	2,300							
License Fees - Budgeting	2,100							
License Fees - xxxx	-							
License Fees - xxxx	-							
Discount on listed Licence fees	50%	2 years warranty included in price						
II Annual fee (support or license) for maintenance.								
	20%	- Annual maintnance as amount of the licence fee, 2 years warranty included in price						
System Software and Technology Licenses								
License Fees for System servers	Server licences and cluster fees							
Database System (Enterprise)	900	Per user	or	47,500 Per CPU * no used				
License Fees for Core System (Technology licences)	Additional technology to modify and operate the System platform							
Other Software								
Report generator								
Backup Software								
License Fees for Network & System Security Admin SW								
Discount on Technology and Other software	50%	NOT used in estimates						
Annual Maintenance for System Software and other Technology	22%	2 years warranty included in price						
Consulting-Implementation Services								
Implementation planning (system scope)	# days, and Fee per day	Input	Unit					
Business Requirements Definition	# days, and Fee per day		2.7 m/mths					
Operations Analysis	# days, and Fee per day		4.5 m/mths					
Process Improvements/Enhancements	# days, and Fee per day		9.1 m/mths					
Applications Setup and Configuration	# days, and Fee per day		27.3 m/mths					
Documentation	# days, and Fee per day		6.8 m/mths					
Data Migration	# days, and Fee per day		2.3 m/mths					
System roll-out - Hardware	# days, and Fee per day		5.5 m/mths					
System roll-out - Software	# days, and Fee per day		1.8 m/mths					
Testing	# days, and Fee per day		1.8 m/mths					
			2.7 m/mths					
			64.5 m/mths					
Change Requests during the first year *	10%	of the consulting Services during the implementationa and the first year						
	Budget	1st YR	2nd YR					
CR - Core Financial Modules	1	70%	30%					
CR - Project Accounting Modules		70%	30%					
CR - Business Intelligence		70%	30%					
CR - Budgeting		70%	30%					
CR - xxxx		70%	30%					
CR - xxxx		70%	30%					
Technical Support - for System								
Professional Support for the system	1	* Lump Sum estimate, for services provided after Warranty period						
Training								
End User Training	Estimated cost per user							
Technical Training for System Admin	Courses required to provide First level of support for the system							
Interfaces to 3rd Party systems - Lump sum effort								
Effort required to modify the system to exchange information with other systems	Lump Sum estimate per system							
Other assumptions								
System Cost Over Years		Estimated %						
		Y1	Y2	Y3	Y4	Y5	Y6	Total
Implementation of the FMIS system		70%	30%					100%
Telecomm assumptions		USD						
Leased line								
Connection fee per user		716						
Monthly /per user		373						
Volume discounts								
Other software		20%						
		NOT used in estimates						

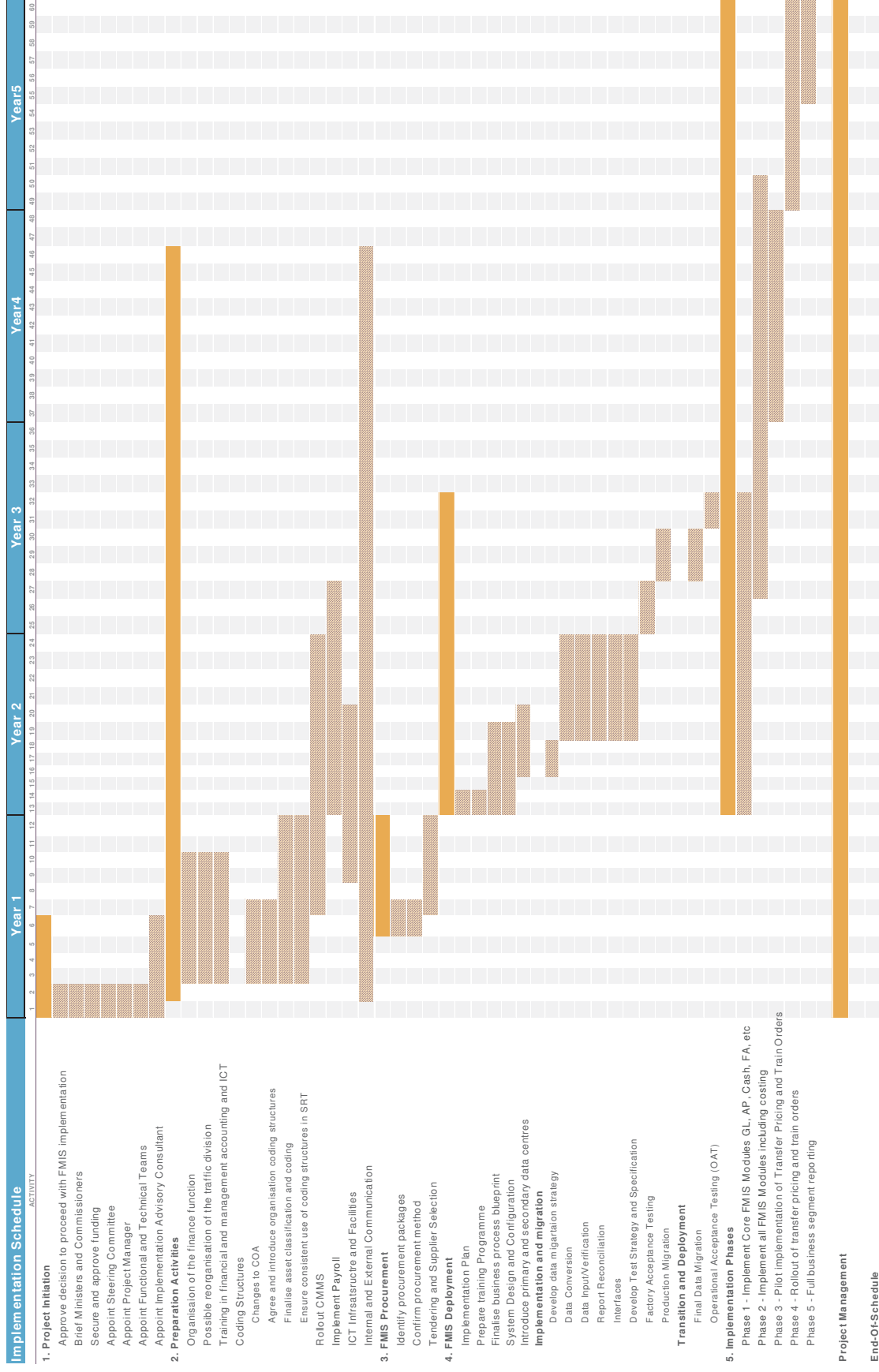


Figure 6. Implementation Schedule



## APPENDIX B - COMMUNICATION PLAN

Title

### APPENDIX B – COMMUNICATION PLAN

Author (s)

Sakda Darawan

Date: 27.12.2013

Authorised

Kayvon Adhami – Project Director

Date: 27.12.2013

#### Document Revision table

Version Number	Date of Issue	Author(s)	Brief Description of Change(s)
1.0	29.12.2013	Sakda Darawan	Initial Draft to ADB

The content of this report constitutes technical assistance provided solely for the project purpose and its terms of reference and is the sole responsibility of **Corporate Solutions Consulting Limited**. The views expressed herein cannot be taken to be the opinion of either the **State Railways of Thailand** or the **ADB**. Furthermore the procedures for this report do not constitute an audit or review made in accordance with International Standards on Auditing or Review Engagements or any other audit or review standards, and no assurance is provided in respect of any process. Indeed other matters which would have been reported might have come to the attention of the consultants had additional procedures been carried out.

The authors welcome further discussion of issues raised in this report.

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## 1 RATIONALE

1. The objective of the FMIS is to strengthen SRT's accounting and financial management information system to underpin on-going improvements to SRT's institutional structure and operations. These improvements are required if SRT is to play a role in the future transport strategy for Thailand. Modern integrated information systems are needed to support effective operations as well as to provide timely and relevant information for SRT managers for better business performance of the SRT
2. There will be a number of changes in the SRT Financial and Accounting Department (F&A) resulting from implementation of the FMIS. These changes will improve operations and improve performance: in doing so they will affect a number of people, especially the staff in F&A, but also other internal and external stakeholders. Until new practices become established, organizational performance may be affected, as employees become accustomed to new ways of performing tasks and new interactions between SRT business units and divisions.
3. The process from conception to completion and implementation requires a considerably period of time. People become impatient and lose sight of the eventual objective. To facilitate changes and achieve the best possible results requires a well thought out and executed communication plan.

## 2 OBJECTIVE

4. The objective for the communications plan can be summarized as:
  - To create awareness and understanding which leads to acceptance of changes in the SRT in relation to FMIS
  - To achieve the cooperation from employees in F&A and other departments of SRT in promoting the FMIS
  - To raise the awareness of the external stakeholders and the public in general of the development of FMIS in SRT to gain trust as well as marketing a positive corporate image for SRT

## 3 TARGET GROUPS

5. There are three distinct target groups for the communications plan:
  - People who are directly affected and who will use the FMIS –principally F&A staff
  - SRT people who will use the outputs from the FMIS - principally other SRT units
  - External stakeholders - Government Institutions: Ministry of Finance (State Enterprise Policy Office/SEPO, General Auditor), Ministry of Transportation; Banks, Contractors and Suppliers; and the public in general.

## 4 COMMUNICATION STRATEGY

6. The purpose is to clearly communicate developments in SRT to the targeted audiences and help them understand the objectives for the introduction of FMIS and the benefits that will pursue. Effective communication for SRT means that expectations are clearly stated, objectives and plans are expressed well, and the defined target group is kept informed in time.
7. The proposed strategy is to get participation and involvement from the staff of F&A and to encourage them to be a “proclaimer” of the process. If Finance and Accounting staff understand and take ownership of the new system, they can help inform others who are not as directly affected. To achieve this, the Finance and Accounting staff need to be kept informed so that they have full knowledge of FMIS developments, inform internal and external stakeholders and become the drivers of change.
8. Meanwhile, the resources and tools available in the SRT's PR Department should be utilised to disseminate the information to other target audiences in a consistent manner.

## 5 COMMUNICATION CHANNELS

9. A mix of various different classical and modern communication channels is suggested to reach the above mentioned target groups in the best possible way. The means to reach each of these target groups is described below.

### 5.1 FINANCE AND ACCOUNTING

10. It is very important that the staffs are involved in all stages of development. The staff from all levels should be included into the design of the reorganisation plan and the implementation plan in order to reduce the feeling of job insecurity and doubts. Staff should be enthusiastic to see things happening along the way. To achieve these, the following activities should be designed so as to let staff participate as much as possible:
  - Seminars
  - Workshops
  - Discussion forums
  - Cooperation and Partnerships
11. It is advisable to have the following instruments to send the message across and get the feedback for further improvement:
  - A regular Newsletter on achievements and any progress with reorganisation.
  - A 'suggestion box' in an accessible location and printing the best suggestions in the Newsletter.
  - Periodical Questionnaires to gather opinion.
  - Using the Announcement Board in F&A offices for any new achievement.
  - Organising 'social events' sessions to celebrate progress.
12. Furthermore, modern media e.g. Facebook's page should be used. Most people have access to and use Facebook. It is an effective way to keep the stakeholders updated as to the development. A dedicated page should be set up exclusively for the Project. A team of at least 2 capable administrators of the page should be assigned to handle the updates, collect feedback and prepare the summary for the consideration of the Project Manager. At the same time, the content in this Facebook's page will be a PR tool for the external audiences as well.

### 5.2 OTHERS GROUPS IN SRT

13. The approach for other SRT staff should be similar to that for F&A. The preferred channels for non-F&A staff will be the newsletter and announcement boards, but staff should also be encouraged to "friend" the F&A Facebook page.

### 5.3 EXTERNAL TARGET:

14. The development of the Project is a good opportunity to notify the external stakeholders and the public in general in order to gain trust as well as a positive corporate image for SRT as it embarks on development projects.
15. Communicating with the Government Institutions such as the Ministry of Finance (State Enterprise Policy Office/SEPO, General Auditor), Ministry of Transportation and Banks, Contractors as well as Suppliers is essential. They all have interest in knowing the latest developments in SRT. Contact lists for each of these institutions must be developed and SRT monthly newsletter should be distributed to these contacts. A column dedicated for a regular article in the monthly newsletter of SRT should be written by the Finance and Accounting Department.
16. To reach the public in general, journalists and reporters should be invited to periodically interview executive directors of SRT about organization changes and the introduction of FMIS. The articles published in the media could well be uploaded to the Facebook's page mentioned earlier. The copies of the article should be circulated internally in SRT. Any positive media news is likely to boost the moral of SRT employees.

17. SRT's website [www.railway.co.th](http://www.railway.co.th), should also be used to publicise FMIS and any reform and development in the organisation. It is recommended that SRT's current website is professionally reviewed to improve its quality as well as cater for information campaigns.

## 6 SPECIFIC ACTIONS

18. The tables below provide an action plan for communication with internal and external stakeholders. These plans should be put into action as soon as there firm commitment in SRT to proceed with the implementation of FMIS

## 6.1 Proposed Communications Plan for Internal Audiences

Item	Activity	Issues Addressed	Objective	Actions	Timing	Frequency	Estimated Cost
1	Facebook Page	1. What is FMI S? 2. Job uncertainty 3. Updates	1. To create sense of belonging and ownership of FMI S 2. To introduce FMI S across SRT as well as to the general public on general aspects and progress of the implementation 3. To get immediate feedback	A team of at least 2 capable administrators should be assigned to manage the Facebook page, handle posting of updates, collect feedback and prepare the summary for consideration by the Project Manager  Whenever there is appropriate media coverage this should be posted to the Facebook Page	As soon as possible	On-going basis	Salaries of administrators
2	Newsletters (to be handled by the Project Manager)	1. What is FMI S? 2. Job uncertainty 3. Updates	1. To create sense of belonging and ownership in FMI S 2. To introduce FMI S across SRT and to inform readers about reforms and developments in SRT	A person should be appointed to work with the Project Manager, to prepare and produce the newsletter.	Starting from the first month after the approval of FMI S implementation	Bi-monthly throughout the implementation period	4,000 copies with the production cost of 25,000 Baht/issue  150,000 Baht/year  + salary

Item	Activity	Issues Addressed	Objective	Actions	Timing	Frequency	Estimated Cost
3	in-house seminars or workshops and discussion forums	1. What is FMIS? 2. Job uncertainty	1. To create sense of belonging and ownership in FMIS 2. To reduce the feeling of job insecurity and doubts 3. To involve staff from all levels in the design of the organization and implementation processes	A series of in-house seminars or workshops and discussion forums with a mix of representatives from various departments / divisions	Starting from the first month after the approval of FMIS implementation	Monthly	10,000 Baht for 25-30 persons at a time to cover the costs of handouts, refreshments, etc.  120,000 Baht/year
4	Suggestion box	Job security	1. To get direct feedback on change in FMIS 2. To reduce the feeling of job insecurity and doubts	A 'suggestion box' in accessible location and to print the best suggestions in the newsletter	Starting from the first month after the approval of FMIS implementation	On-going basis	- None -
5	Periodical questionnaires	Job security	1. To get feedback on change in FMIS 2. To enable appropriate adjustment and response	Distribute the questionnaires and conduct opinion polls	Starting from the first quarter after the approval of FMIS	Quarterly	3,000 sets/time  40,000 Baht/year
6	Announcement Boards	Updating the progress	To use as an instrument to send the message across about the progress during the implementation of FMIS.  Format and size of texts should be different from normal announcement sheet	Publish news of achievements on announcement board in various locations.	Starting from the first month after the approval of FMIS implementation	As often as necessary	- None -
7	Social Events	Keeping the staff motivated	To motivate the staff during the course of implementation should the process takes	Arranging from time to time for some	Based on implementation	Based on implementation	30,000 Baht covering the

Item	Activity	Issues Addressed	Objective	Actions	Timing	Frequency	Estimated Cost
			longer time that scheduled  This activity should be arranged in line with special occasions, e.g.: - Management Approval for Implementation - FMIS- FMIS Acquisition - FMIS Deployment	'social events' sessions to celebrate progress	timeline of each activity of the implementation	timeline of each activity of the implementation	proposed activities
8	Generated events	Keep up the interest	To motivate the staff during the course of implementation should the process takes longer time that schedule	Creating events to reassure staff that things are happening	As required	As required	Minimal

## 6.2 Proposed Communications Plan for External Audiences

Most activities to reach the external audiences should be through the function of SRT's PR Department. The activities are proposed as follows:

Item	Activity	Issues	Action	Objective	Timing	Frequency	Estimated Cost
1	Facebook Page	Introducing and reporting of FMIS progress	(See under 6.1)	(See under 6.1)	(See under 6.1)	(See under 6.1)	-salaries
2	www.railway.co.th	Introducing and reporting of FMIS progress	<p>This official website should be used to publicize of FMIS, the changes in SRT and development of FMIS as well.</p> <p>It is advisable to improve the look of the website, not only to accommodate the information of FMIS but also to reflect the "new" image of SRT</p>	<p>1. To publicize FMIS to external audiences</p> <p>2. To inform the public of the changes that are taking place in SRT</p>	Starting from the first month after the approval of FMIS implementation	On-going basis	- None – (SRT's PR budget)
3	A column on a regular basis to be published monthly in official SRT newsletter (15,000 copies/month).	FMIS progress in SRT	The Implementation Team should be responsible to contribute the article about FMIS in details. The language should be easy to understand and cover	<p>1. To create trust and understanding toward SRT among the target audiences</p> <p>2. To educate the public on the introduction of modern management techniques</p>	Starting from the first month after the approval of FMIS implementation	Monthly	- None – (SRT's PR budget)

Item	Activity	Issues	Action	Objective	Timing	Frequency	Estimated Cost
4	Inviting the media for Executive Interviews	FMI S progress	<p>various advantageous aspects of FMIS which in turn will create trust and understanding among the target audiences.</p> <p>The top level directors of SRT should be interviewed about organization changes and FMIS</p> <p>Different angles and issues should be sharing to the media by individual SRT's executives</p> <p>This activity could be arranged in line with special occasions, e.g.:</p> <ul style="list-style-type: none"> <li>- Management Approval for Implementation of FMIS</li> <li>- FMIS Acquisition</li> <li>- FMIS Deployment, etc.</li> </ul>	<p>1. To reach the public in order to gain trust and confidence for SRT</p> <p>2. To strengthen the dialogue between SRT and the media using FMIS as a tool</p>	Based on implementation timeline of each activity of the implementation	Based on implementation timeline of each activity of the implementation	-None-



## APPENDIX C – BRIEFING NOTE

Title

### APPENDIX C - BRIEFING NOTE

Author (s)

David Lupton-Team Leader/ Project Team

Date: 27.12.2013

Authorised

Kayvon Adhami – Project Director

Date:27.12.2013

#### Document Revision table

Version Number	Date of Issue	Author(s)	Brief Description of Change(s)
1.0	29.12.2013	David Lupton	Initial Draft to ADB

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## 1 PURPOSE

This note has been prepared to assist SRT to brief the Railway Commissioners, other Government Departments and Ministers on the proposed financial Management system.

## 2 BACKGROUND

1. The Government of Thailand (GoT) has pledged TBH 176 billion of investment in the railway sector and shown strong commitment to the improvement of the railways. However it acknowledges that investment in infrastructure alone would not achieve its objectives. GoT recognises the need for considerable strengthening of organisation, operations and management practices if SRT is to play a leading role in Thailand's future transport system. In particular, there is a need to strengthen SRT's accounting and financial management information system to underpin on-going improvements to SRT's institutional structure and operations.
2. A consultancy study has been undertaken with assistance from the Asian Development Bank. The key output from the study was a specification, with detailed bidding documents for a new management, accounting, and financial information system for SRT to meet its projected information requirements. The Consultant also prepared an implementation plan to deliver the transition of SRT's operations and finances to the new information system, defining key activities, timetable, expected costs, and sources of finance.

## 3 KEY FINDINGS

3. The key issue is that the accounting system does not provide the information SRT needs to manage its business. The accounting system is focussed on meeting statutory requirements – annual accounts and balances. There are problems with the existing system, which is obsolete and dependent on manual data entry, but just replacing the existing system would not address the fundamental problems.
4. SRT needs a management accounting and reporting system that will enable managers to measure and monitor the performance of SRT's main products – its train services. The Consultants propose a reporting structure based on outputs with cost allocation and transfer pricing procedures to relate costs to revenue producing activities. They propose that as far as possible, data capture would be part of business processes so that the data captured is accurate and timely.
5. SRT is making ever increasing losses for a number of reasons:
  - Fares and tariffs have not increased for many years
  - PSO payments do not make adequate provision for capital and maintenance costs
  - Investment in other modes has led to reducing rail market share
  - Pension fund liabilities are a substantial part of the loss
  - Increasing operating losses and heavy borrowing have resulting in ballooning debt and interest payments
6. Improved management accounting and reporting will not address these problems directly but having reliable information on the cost of services will assist SRT in its discussions with Government Ministries.

## 4 BENEFITS

7. With the proposed system, SRT Managers will know:

- How much each train service costs
  - Which services make money
  - Which services lose money
8. SRT will be able to make rational decisions about what services to operate and where to invest.
  9. With the proposed system MOT will know:
    - How much the Public Service Obligation trains cost
    - Whether tariffs cover costs
    - Where SRT makes its profits and loses

## 5 SYSTEM REQUIREMENTS

10. The Consultants have prepared a specification for the required system which will include the following modules
  - General Ledger
  - Accounts Payable
  - Cash Management
  - Project Accounting
  - Fixed Assets Register
  - Invoicing
  - Accounts Receivable
  - Consolidation
  - Budgeting Support
  - Cost Accounting
  - Reporting module
11. The system has been designed to utilise the maintenance management system recently introduced in the Mechanical Business Unit. It is proposed that the maintenance management system is expanded to extend its functionality to provide maintenance management for Civil Engineering and Signals and Telecommunications. The roll of this system is not included in the bidding document produced as part of this project.
12. Payroll and Human Resources are being introduced as a parallel project.
13. The estimated cost of the project is 120 Million Baht for hardware, software system configuration and implementation with a likely ongoing operating cost (licenses, system operation and management) of 8.8 Million Baht. The decision whether to purchase or rent hardware and whether to outsource management of the data centre will be made on the basis of proposals received at the bidding stage

## 6 ORGANISATION REQUIREMENTS

14. It is proposed that the Finance and Accounts Department be reorganised to include the new management accounting function. No other changes to the SRT organisation structure are required, but the system has been designed to support organisation on business segments should SRT decide to adopt such a structure in the future. The system will also support third party track access.

## 7 IMPLEMENTATION

15. Key steps required to implement the project are:
  - Decision to proceed
  - Appointment of Implementation Committee with authority to act
  - Preparation including organization, business processes and training
  - Procurement
  - Configuration and data migration
  - Acceptance testing
  - Realization (phased as required)
16. This process is expected to take two to three years.



# Accounting and Financial Management System Reform of Thailand's Railway Sector

## Synopsis:

The main objectives of the project were to develop a specification for a Financial Management Information System (FMIS) to be introduced in State Railway of Thailand (SRT) and advise the company on steps it should take to procure and implement the system. Project commenced in March 2013 and concluded in March 2014.

The Consultant initially carried out an assessment of the organisation and the relevant practices of the SRT and its information systems infrastructure. It was determined early in the project that unless an appropriate costing system is introduced by SRT, the company will receive limited benefit from the FMIS. A methodology for costing was therefore proposed which once implemented will underpin the overall financial management and reporting system of SRT. The Consultant conducted an assessment of information needs of SRT's internal and external stakeholders. This information plus the proposed costing system were the main basis for finalising SRT's FMIS specification.

The proposed costing system will enable the SRT to introduce an internal transfer pricing as the basis for access charging and for effective management of SRT's operations. FMIS has been designed and specified to support the proposed costing system. The proposed FMIS will also enable the SRT to measure the cost of its Public Service Obligation and to negotiate adequate funding for this service.

In addition to preparing a detailed specification for the FMIS, the Consultant finalised tender documents and provided estimate of costs and an implementation plan for FMIS.

A series of management workshops were held during the project to present, discuss and confirm the design concepts developed through the project. Structured training in financial management and accounting was also delivered to a large number of SRT managers.

