UIC Railway Asset Management
Global Conference 2019

17 - 19 April 2019
UIC Headquarters, Paris

Assisting the Public Transport Authority in the Procurement of O&M and Asset Management services of the largest driverless metro network

Impact of operation in the Asset Management life cycle cost/strategy

Didier Boudon, Egis

egis

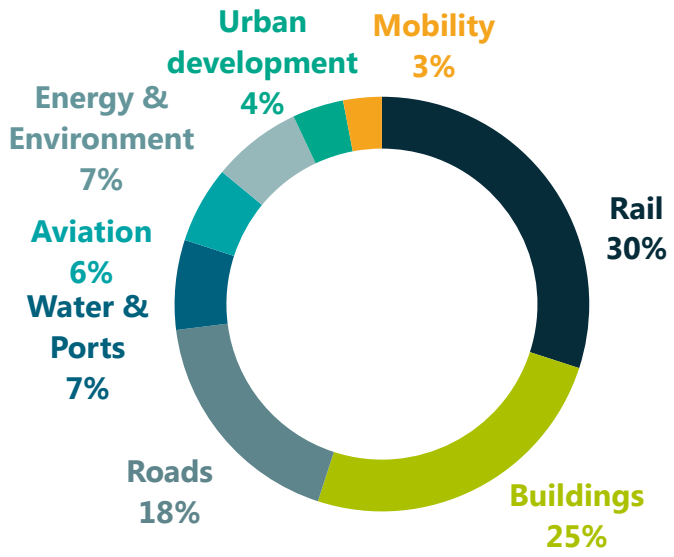
A few words about Egis

EGIS,
A GLOBAL OFFER

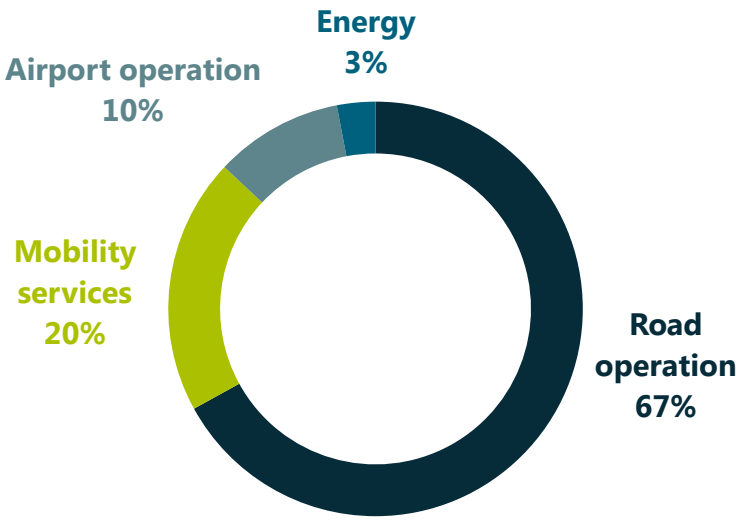
€1.13 Billion

MANAGED TURNOVER IN 2018

Engineering *71%*



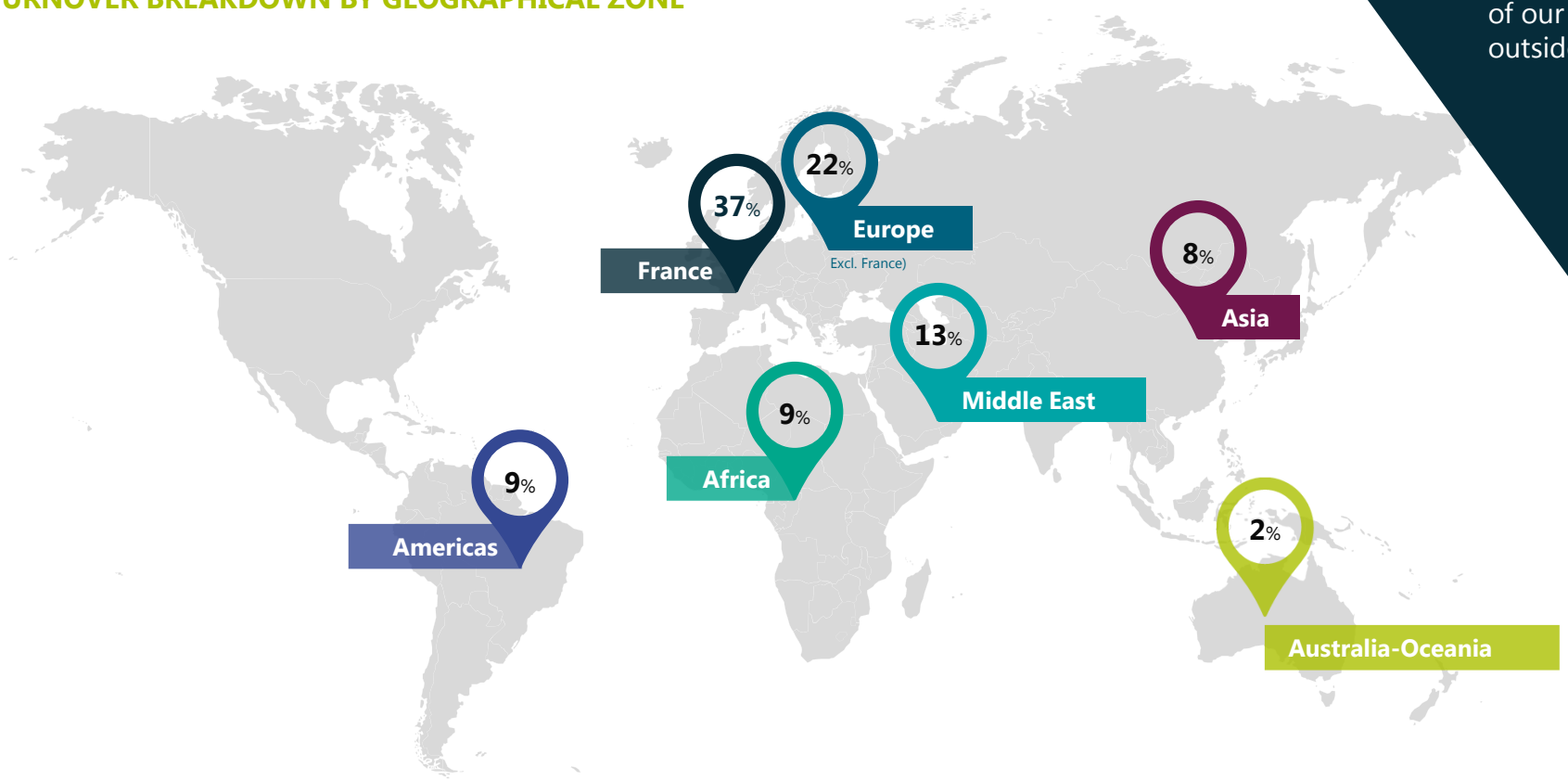
29% **Operation and mobility services**



OUR GEOGRAPHICAL FOOTPRINT

TURNOVER BREAKDOWN BY GEOGRAPHICAL ZONE

63%
of our business outside France



EGIS' SHAREHOLDER STRUCTURE

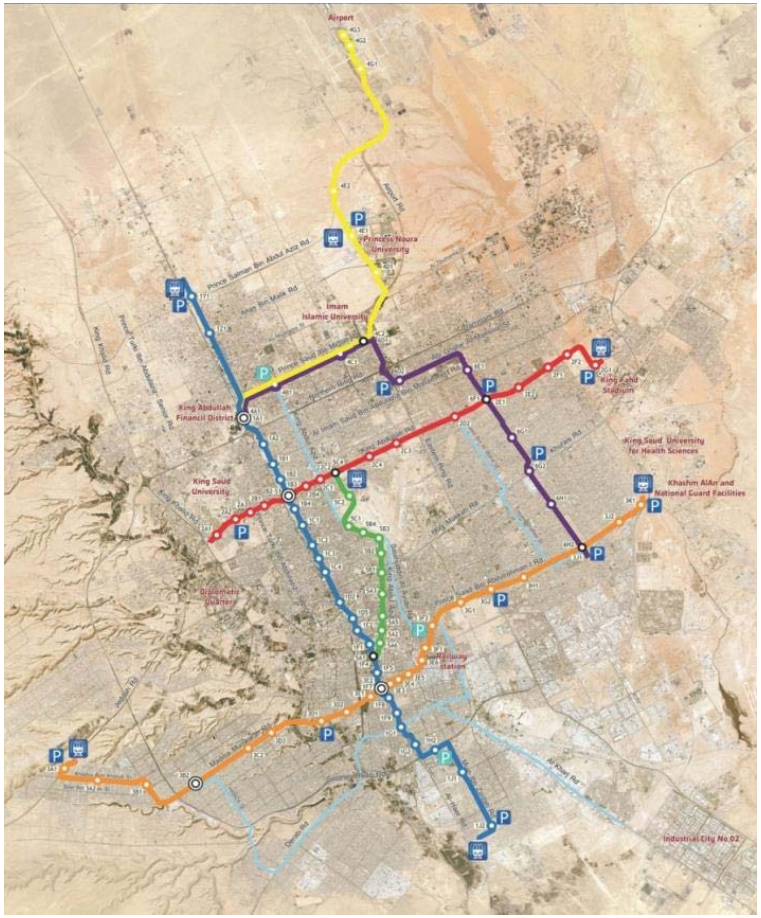
25%
Partner executives and employees

Iosis Partenaires
and
Corporate mutual fund shares

75%
Caisse des Dépôts

Background Information:

The Riyadh Metro Network



- 6 lines (lines 4 & 6 with a common trunk)
- 168 km of double track
  - Elevated: 76.4km
  - At Grade: 35.9km
  - Shallow Underground: 16.5km
  - Deep underground: 39.3km
- 92 Served Stations (pairs of platforms) = 88 stations buildings (locations),
  - including 3 major iconic stations with amenities and ancillary services
- 12 Parks & Ride facilities connected to stations
- Rolling Stock fleets
  - 45 trains of 4 cars
  - 145 trains of 2 cars
- 7 Depots
- 5 Operation control centers

Background Information:

Contract scope

- Metro Operations & Maintenance
  - Timetables / Train Operations
  - Station Operation (Fare Collection, Access Control)
  - OCC(s) + TCC Support
  - Customer Services, Passenger Information & Assistance
  - Safety and Security
  - Interface with Bus Operations
  - Maintenance and asset management of all the metro assets: civil works, buildings, facilities, transit system…

Background Information:

Base Packages

Package	1		2	3		
Lines	1	2	3	4	5	6
Length	38	25	41	30	13	30
Stations	25	15	22	9	12	11

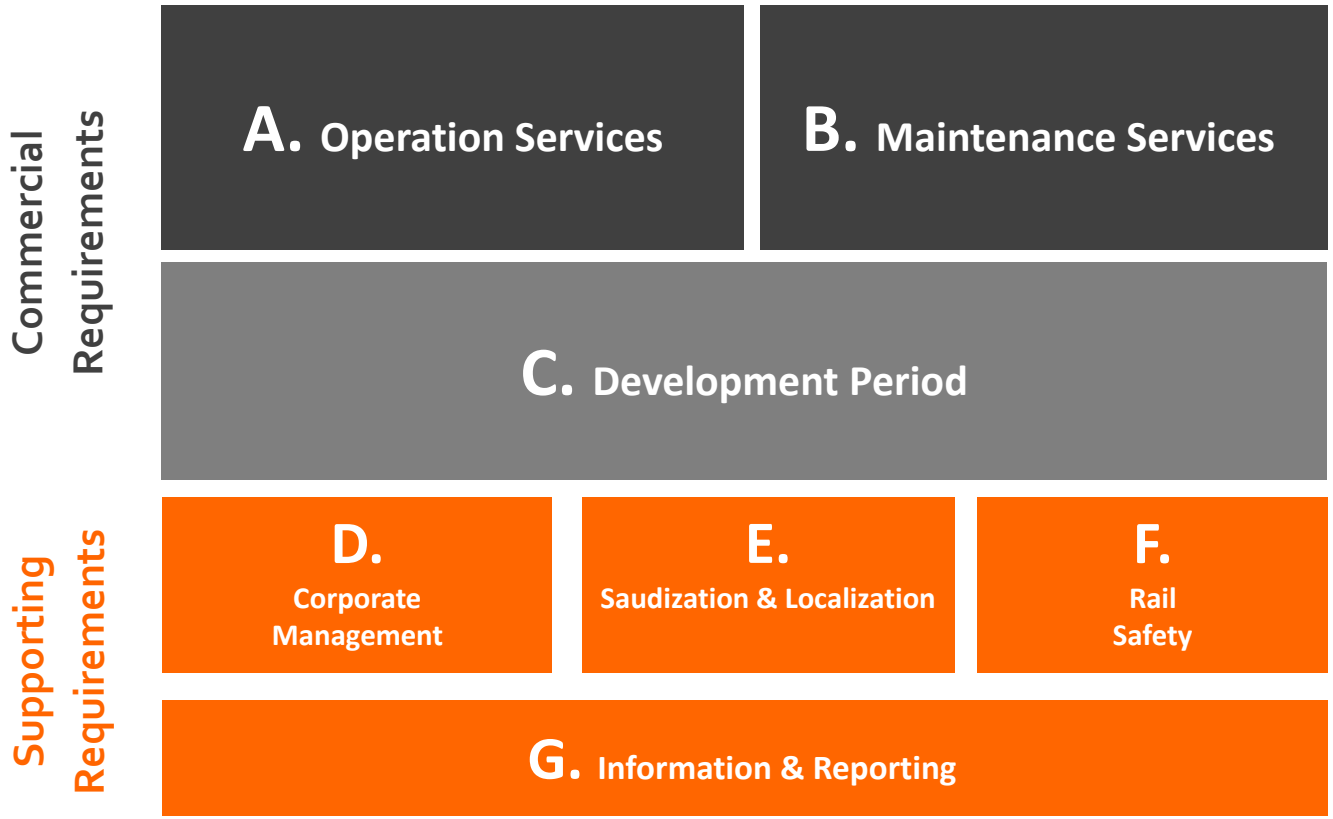
Key Principles of O&M Contracting Strategy

- Contract duration 10 years (5 + 5)
- 2 or 3 operators = 2 or 3 contracts to manage
- "Gross Cost" contracts = contractors does not bear any revenue risk
- The O&M Operator contract(s) to incorporate the transit system maintenance. The transit system supplier(s) could be retained as the transit system maintainer(s)
- "Saudization" and knowledge transfer are essential within the contract
- Flexibility in management of change
- Consistency with Bus Operations

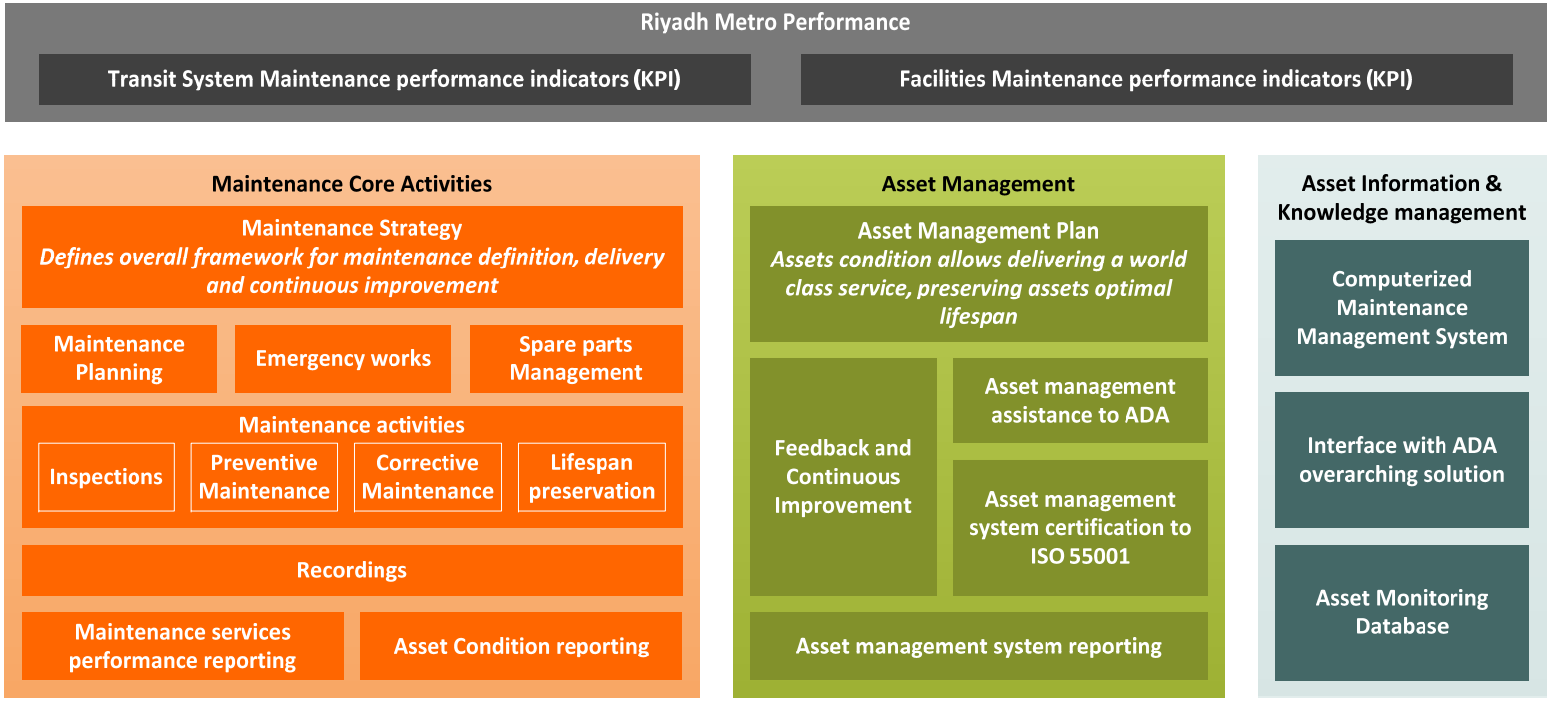
Overriding Objectives

- Riyadh Public Transport Network "RPTN" = ***"A safe & secure, rapid & reliable and also comfortable, demand responsive, seamless door to door Transportation Service to all Riyadh dwellers".***
- Overriding objectives:
  - Provide a **Transportation Service** to users, commuters and dwellers;
  - **Manage the Assets** provided by the Asset Owner (metro infrastructure and related systems);
  - Contribute to a positive and attractive **Image** of the city, as a major public service provider.

Structure of the Terms of Reference



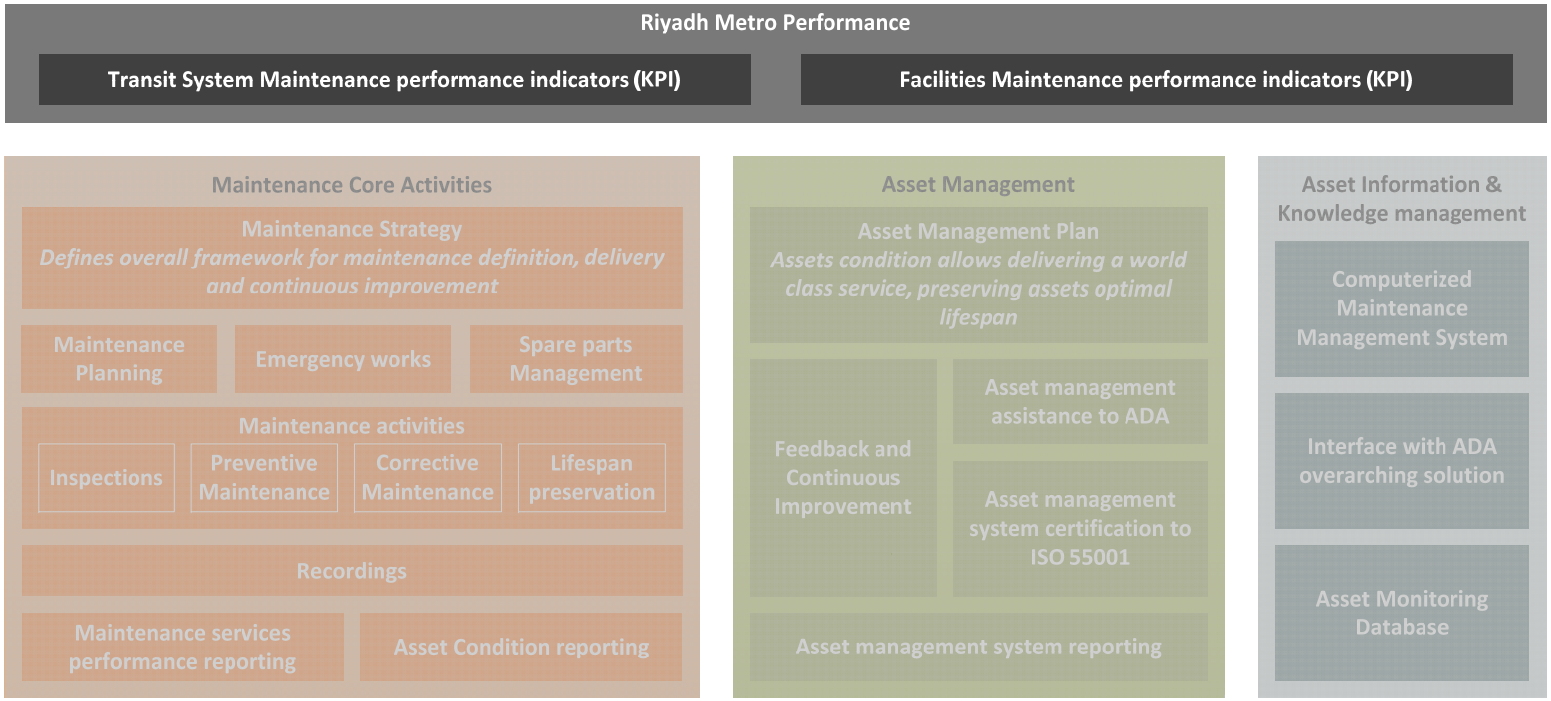
Focus on Maintenance Services Requirements



Focus on Maintenance Services Requirements

Performance based contract

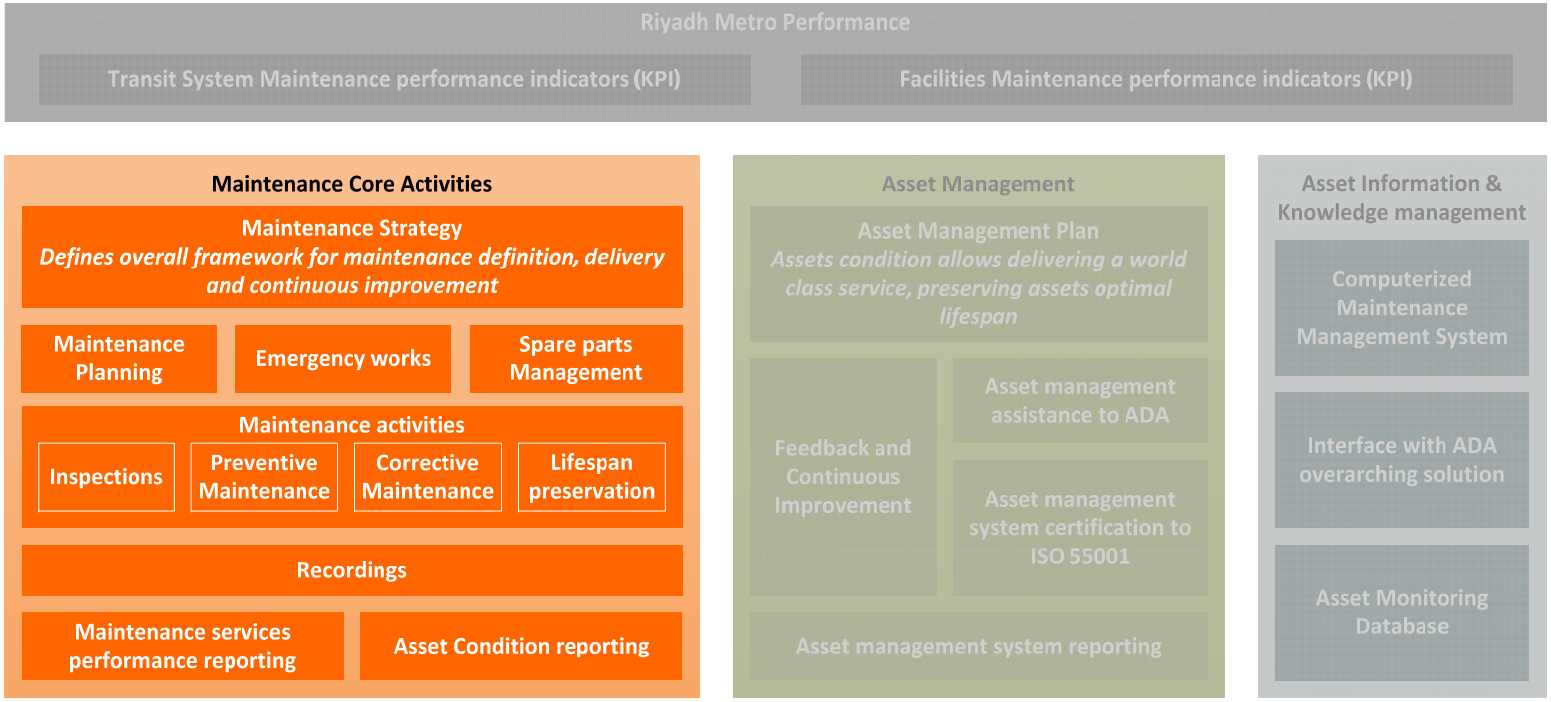
Maintenance performance measured through dedicated KPIs



Focus on Maintenance Services Requirements

Core maintenance activities

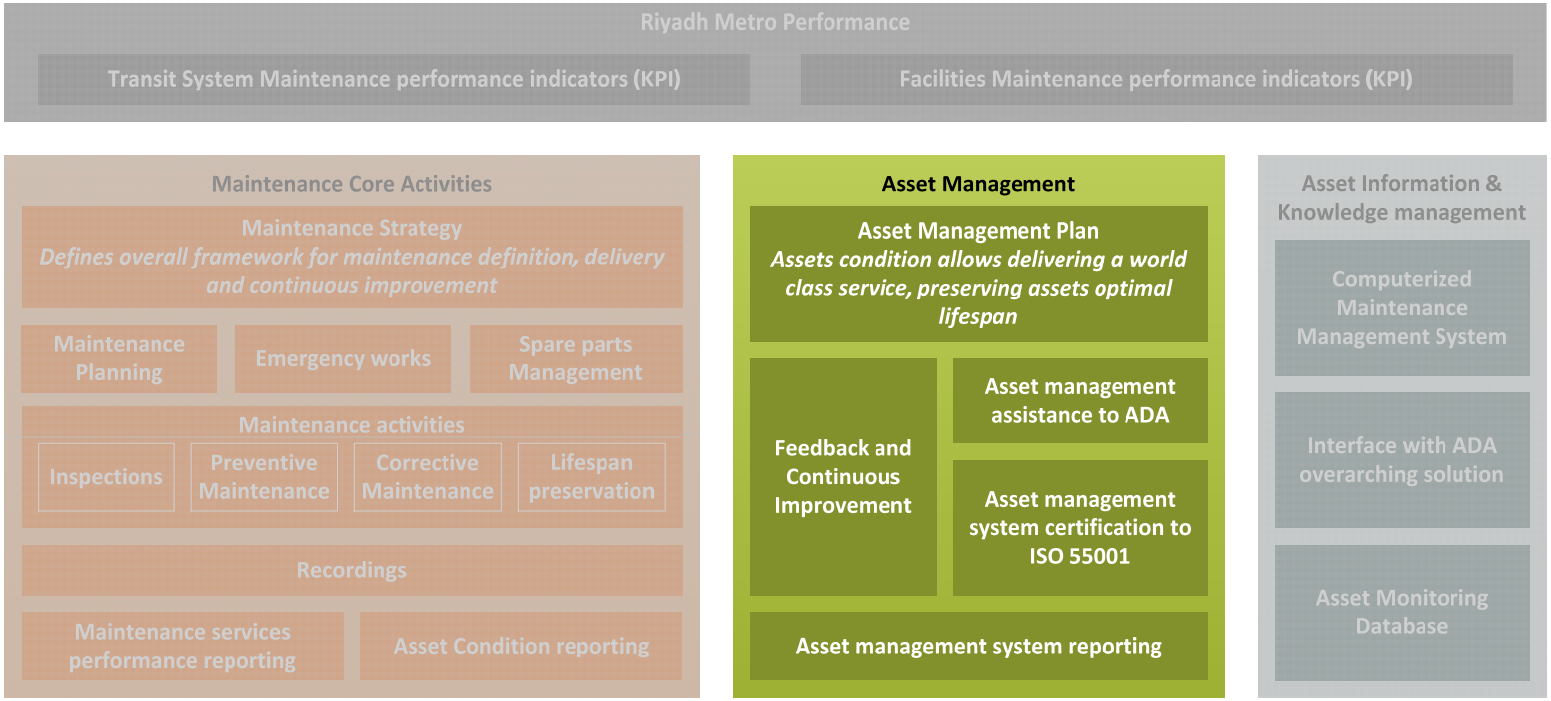
D&B Contracts maintenance documentation is an input for maintenance activities



Focus on Maintenance Services Requirements

Asset management requirements

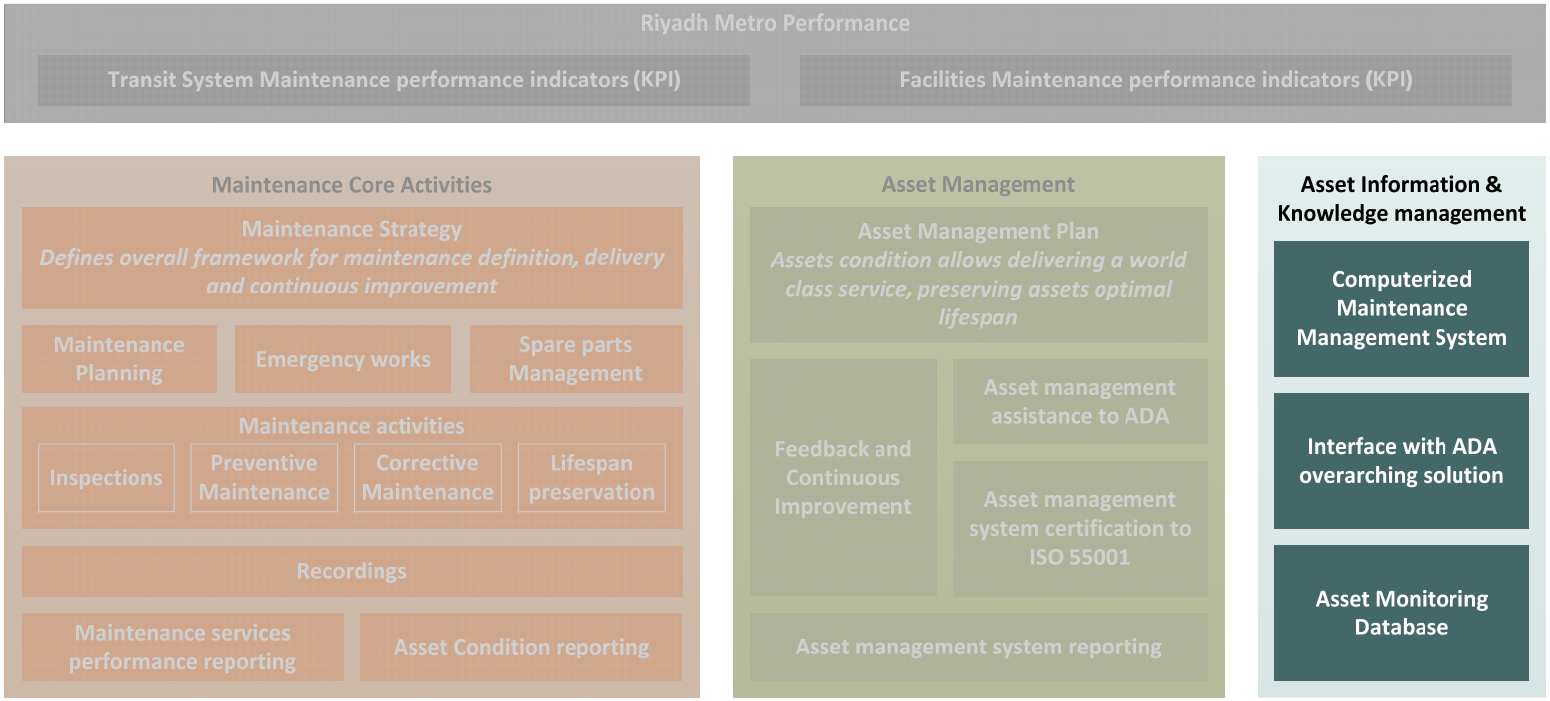
International best practices compliance through ISO 55001 3rd party certification



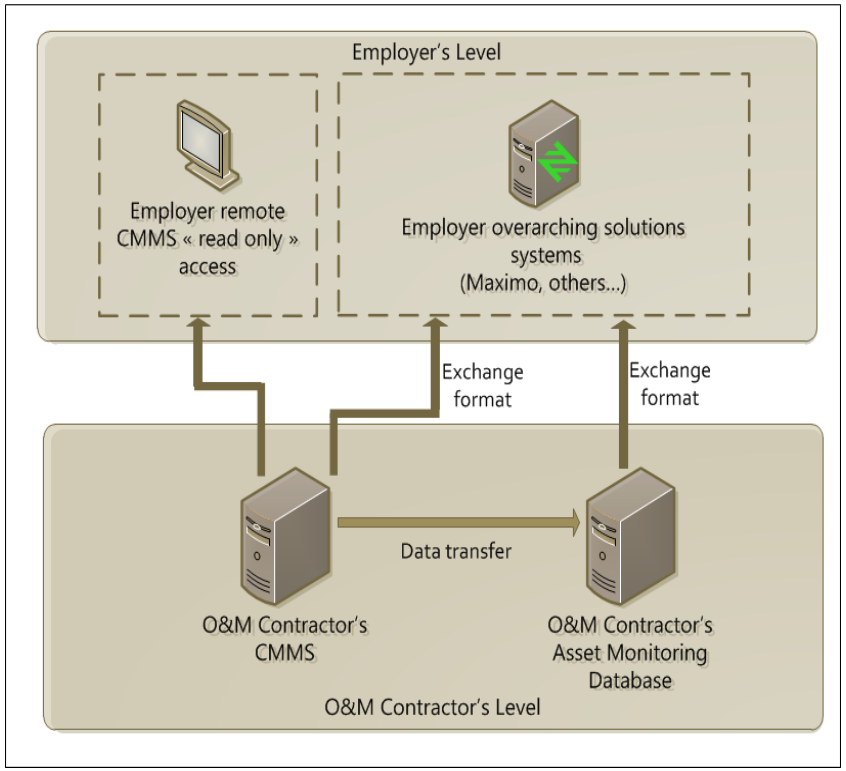
Focus on Maintenance Services Requirements

Asset information & Knowledge management

Data management to build Employer's knowledge



O&M Contractors' CMMS and Employer's Asset Management Overarching Solution



- O&M contractors are required to implement a modern, state-of-the-art Computerized Maintenance Management System

- O&M Contractors' CMMS and asset databases to be fully compatible with the Client's asset management overarching solution.

Performance Measurement

Four Streams of Performance Criteria:

Operations	Transit System Maintenance	Facilities Maintenance	Management
• Passenger satisfaction • Information • Cleaning • Network effectiveness	• Rolling stock, • SCADA, • Communications • Power • CCTV system • Other systems	• Civil works • Buildings • Depots • Stations	• Health and safety and security • Human Resources and Organization • Environment • Reporting

➔ 41 Separate KPI's

Performance Measurement

- Overall KPI Score : KPIs are weighted to take into consideration that some of them may have greater effects on the service provided than others.
- The overall score corresponds to the weighted sum of the individual KPIs.

Area	Level 1	Level 1 weight	Area weight
Operations	A Passenger satisfaction	16 %	40%
	B Information	10 %	
	C Cleaning	12 %	
	D Network effectiveness	2 %	
Transit system Maintenance	E Transit system maintenance	20 %	20 %
Facilities maintenance	F Facilities maintenance	20 %	20 %
Management	G Health and safety and security	10 %	20 %
	H Human Resources and Organization	6 %	
	I Environment	2 %	
	J Reporting	2 %	
	Overall	100 %	100 %

Lessons learned and key benefits

A valuable framework to define Asset Management practices for a greenfield project

ISO55000 = a recognized international and scalable set of practices

"Rules of games" are clearly defined for all players

Certification provides long-term insurance to the owner

Thank you for your attention

Didier Boudon, Egis