

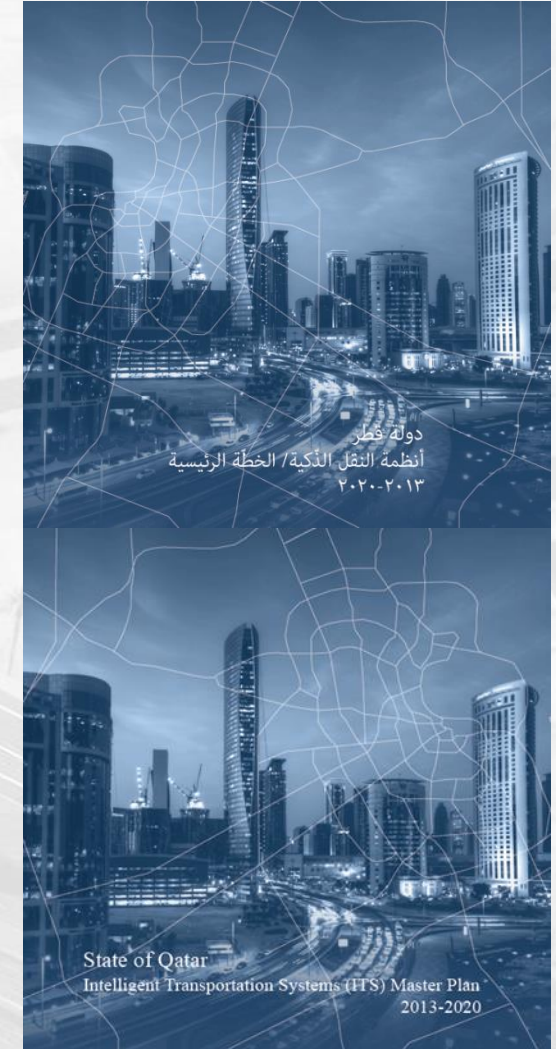
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Qatar Deserves The Best

Intelligent Transportation Systems (ITS) Industry briefing event



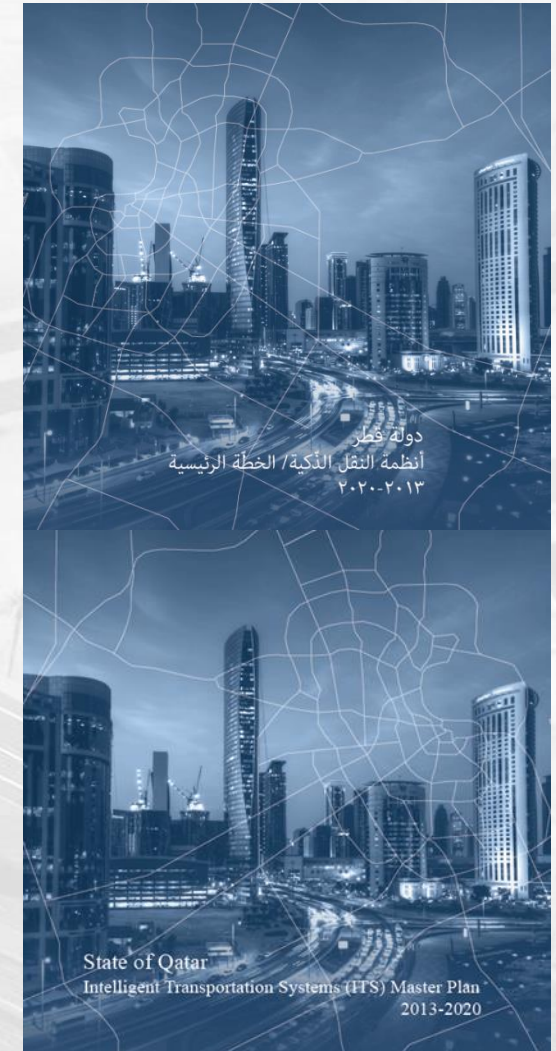
Agenda

- Overview of the day
- Welcome Address
- ITS for Qatar
 - Introduction and background
 - National ITS Master Plan for the State of Qatar
 - Qatar ITS Standards & Specifications
- ITS deployment
 - Corridor management
 - Telecommunications network
 - Traffic Management Master Software
 - Deployment strategy
 - ITS capability timeline
- ITS Procurement
 - Pre-Qualification
- Questions & Answers

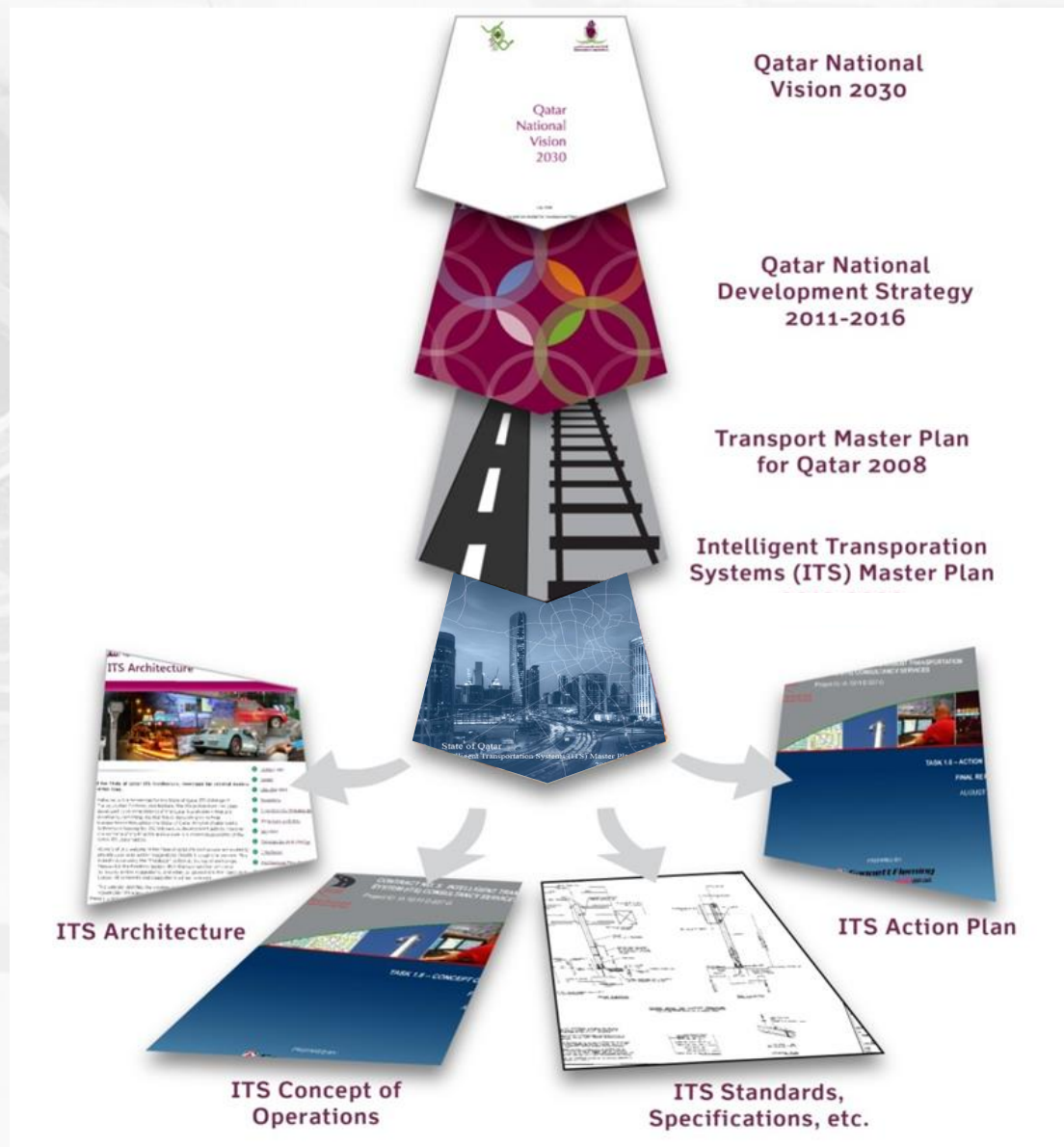


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National ITS Master Plan for the State of Qatar (1)



National ITS Master Plan for the State of Qatar (2)

- The ITS Master Plan has been produced and is being agreed with key stakeholders (supplemented with Action Plan for 15 Strategies)
- ITS Architecture is complete
- ITS Action Plan will be published with the Master Plan

ITS Governing Body	Roadway ITS	Multi-modal traveler information system
'Keep Doha Moving'	Transportation Data Archive	Fleet Management systems
National Transportation Management Centre (TMC)	ITS components for Commercial Vehicle Operations	Connected Vehicle Program
Smart Work Zone Program	Integrated payment mechanism for the transportation network	Roadway Asset Management Program
Roadway Incident Management	ITS Parking Management Program	Roadway Traffic Regulation Enforcement Program

Strategic Outcomes of National ITS Program

Enhanced Safety
Reduce Traffic Accidents
Improve Accident Survival
Minimize Secondary Impacts

Smoother Traffic
Lower Congestion
Reliable Journey Times
Accurate, Trusted Travel Information

Improved Environment
Improved local air quality
Reduce greenhouse gas emissions
Deliver a sustainable system

Improved Customer Satisfaction
Informed Public
Enhanced Driver satisfaction



Qatar ITS Standards & Specifications

- ITS Standard Details and Specifications
 - Current Edition - Version 2.0
- ITS Deployment Manual published Feb 2013, version 2.0 in progress
- All documents available on Ashghal public website
(<http://www.ashghal.gov.qa/en/Services/Pages/ServiceDetailsPage.aspx?ServiceID=46&category=2&SecID=1>)



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Public Works Authority

State of Qatar

Intelligent Transportation System (ITS) Specifications

Version 2.0

July 2013



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I A
INFRASTRUCTURE AFFAIRS
DESIGN DEPARTMENT-ROADS

CIVIL AND STRUCTURAL STANDARDS FOR INTELLIGENT TRANSPORTATION SYSTEM (ITS)

VERSION 2.0
JULY, 2013

2013

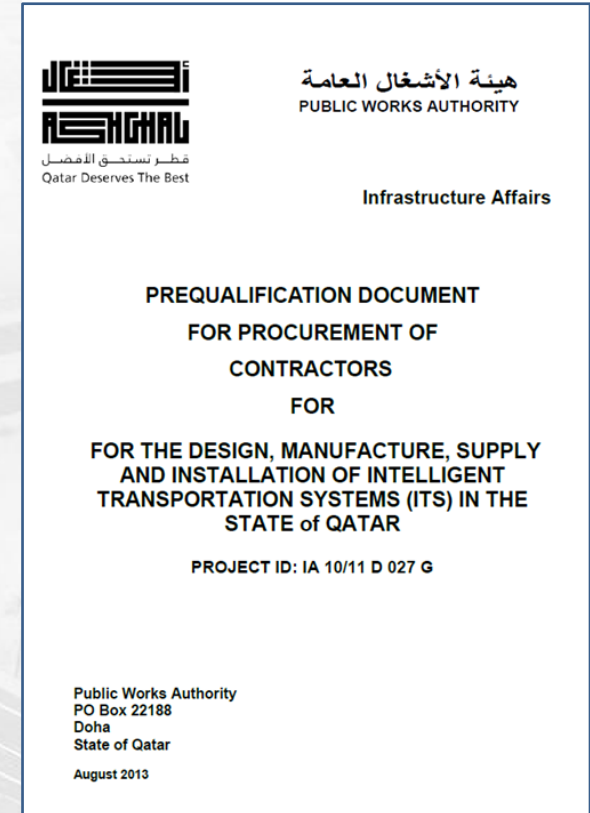
2020

The ITS capability timeline

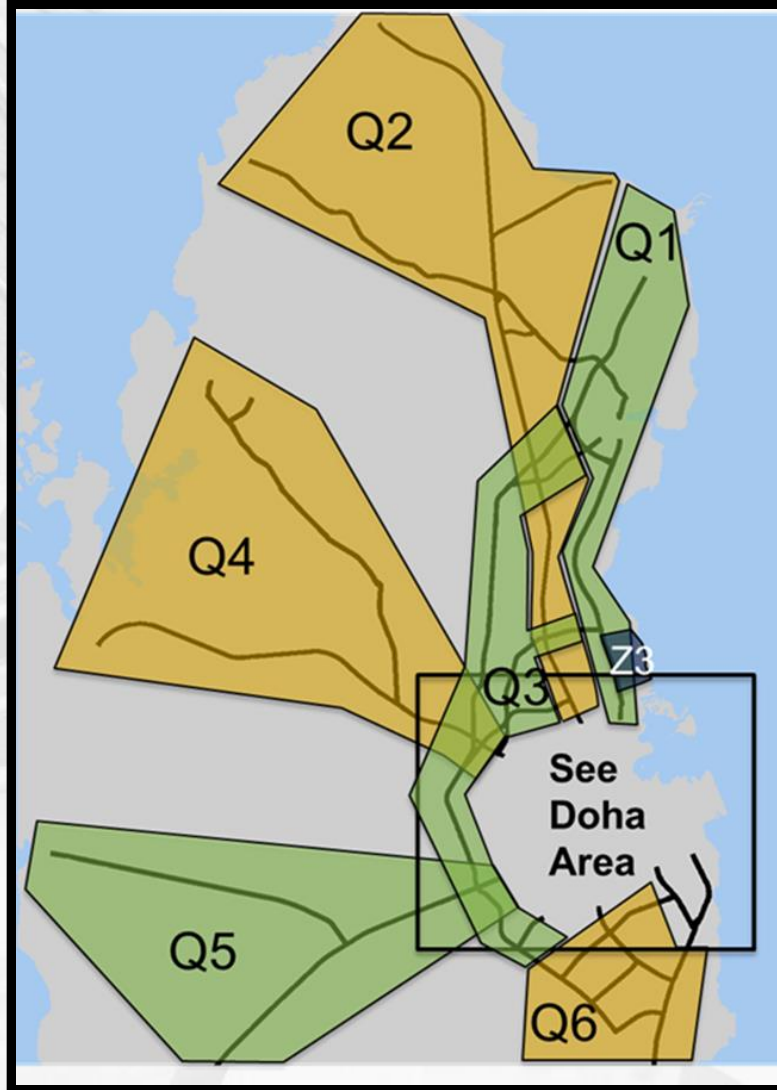
		Single Modes	Coordinated Modes	Partial Integration	Multimodal (MM) Integration	Multimodal Optimized
Governance	Strategic Planning	Functional/area planning	Project based planning (single mode)	Integrated agency wide planning	Integrated corridor based planning	Integrated regional planning
	Performance Measurement	Minimal	Defined metrics (mode based)	Limited across agencies	Shared MM system wide metrics	Continuous system wide
Network Optimization	Data Collection	Manual or limited	Dynamic	Dynamic with multiple inputs	Dynamic and focused on shared outcomes	Dynamic and system side across all modes
	Network Planning	Limited with ad-hoc analysis	Networked with period analysis	Single GUI with some Business Intelligence (BI)	MM integration and dynamic analysis for BI	Extended integration and full dynamic analysis BI
	Network Operations	Ad-hoc, reactive	Centralised	Automated, mode based	Automatically Optimized MM based	Automated, dynamic response, through Predictive Capability
	Disruption Management	Manual detection, response and recovery	Manual detection, coordinated response, manual recovery	Automated detection, coordinated response, manual/dynamic recovery	Automated pre-planned MM response and recovery plans	Dynamic MM recovery plans, based on actual network conditions
Integrated Transportation Services	Traveller Information	Static Information	Static trip planning with limited dynamic alerts	Multichannel trip planning and account based alerts	Location based services in-journey with alerts	Location based services with dynamic alerts and rerouting
	Payment Systems	Manual cash collection	Automatic cash machines	Electronic Payment	Integrated fare/transaction card	Multichannel fare/transaction facilities (card, cell phone, NFC etc.)
	Customer Relationship Management	Minimal – no accounts	Separate account for each	Multichannel account by mode	Unified customer across modes	Unified customer with incentives to optimize travel by mode

ITS Procurement

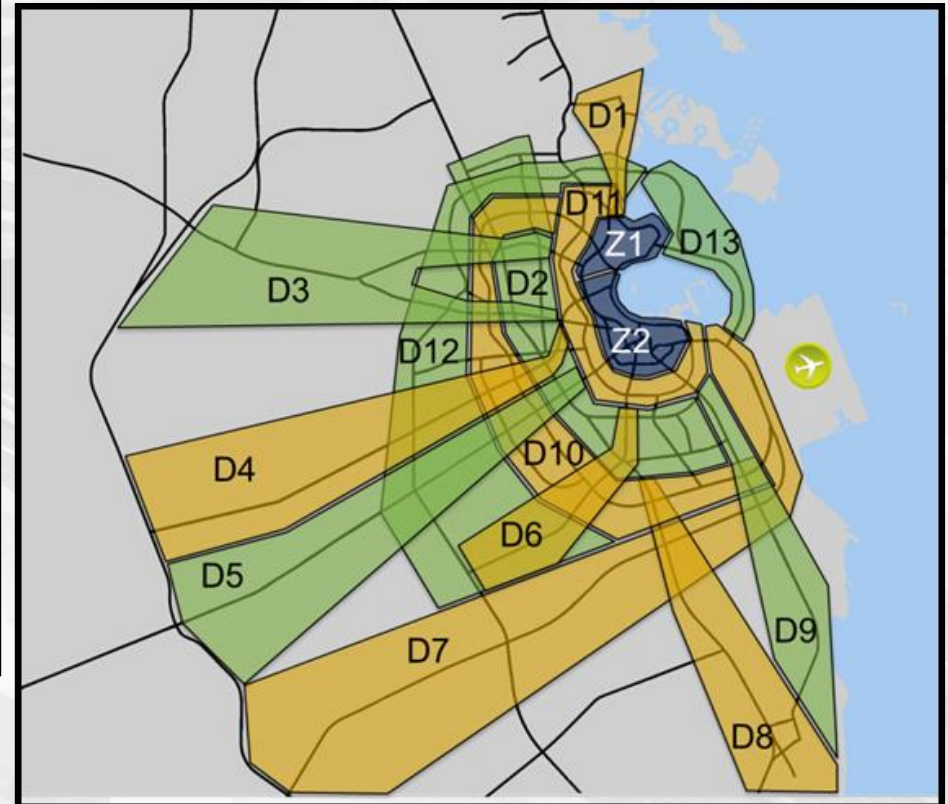
- Pre-qualification (PQ) document issued on 11th September 2013
- Closing date **24th November 2013**
- 9 Technology Lots
 - Software systems
 - Detection technologies
 - Information provision technologies
 - Parking and access control systems
 - Traffic signals
 - Payment systems
 - Security and safety systems
 - Telecommunications technology
 - Connected vehicle programme
- Designed to meet all Qatar transportation network stakeholders' (Multi-Modal) ITS functional needs
- Supplemented by Industry briefing event



ITS implementation – ITS Management Corridors

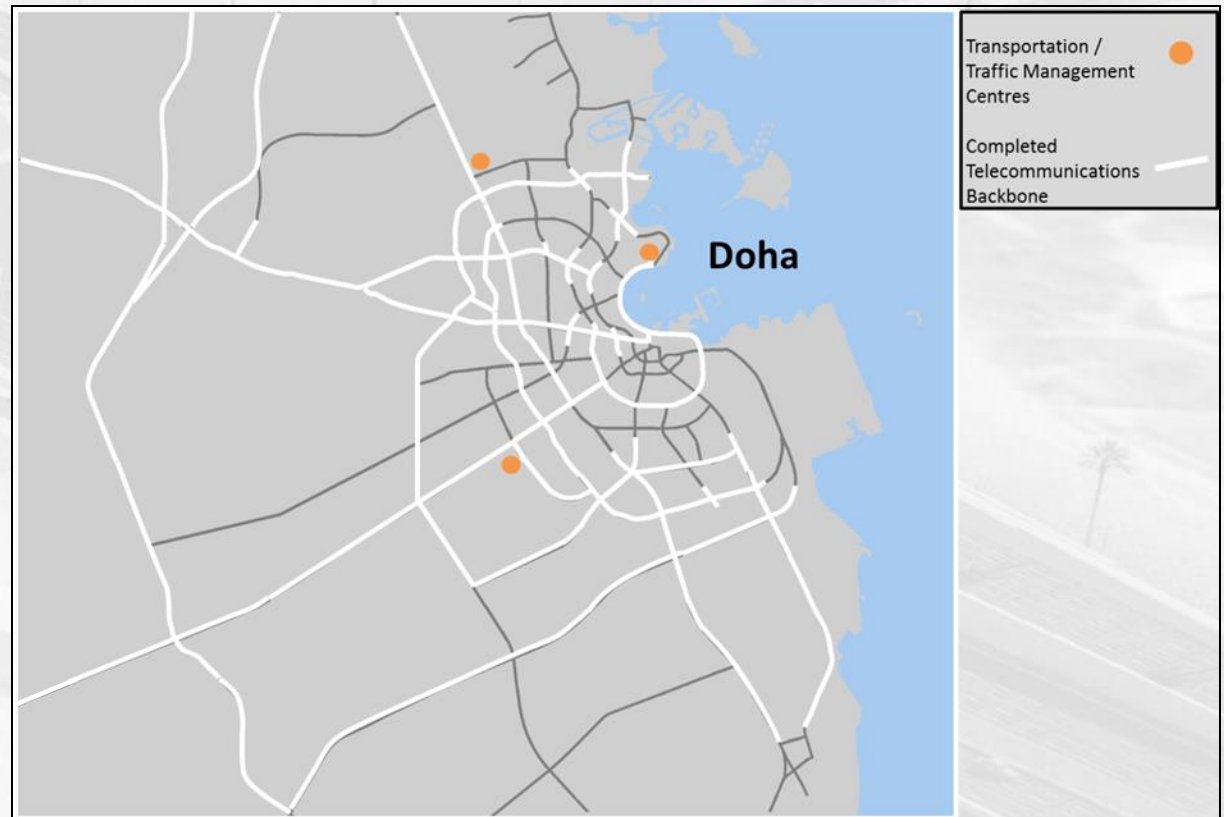


- **Outcome focused Network Management**
 - Journey Time Reliability on key corridors
 - Accurate, Trusted Travel Information
 - Enhanced road safety
 - Rapid Incident detection and response
- Strategic events, diversions and network optimisation



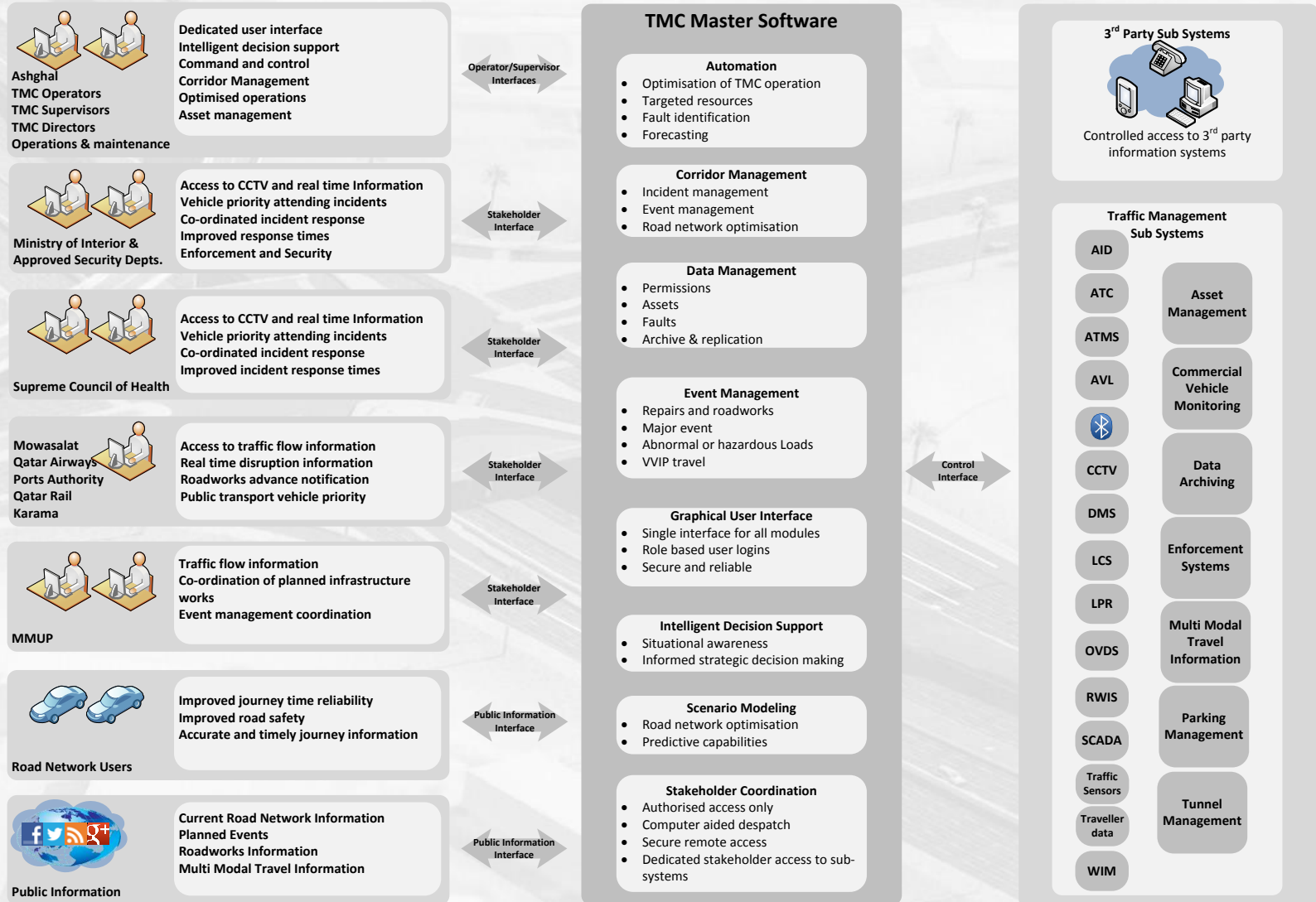
Planned Ashghal ITS telecommunications backbone

- ITS Telecommunications deployment plan developed
- ITS Telecommunications Strategy under development
- Mix of Fixed and Wireless Technologies



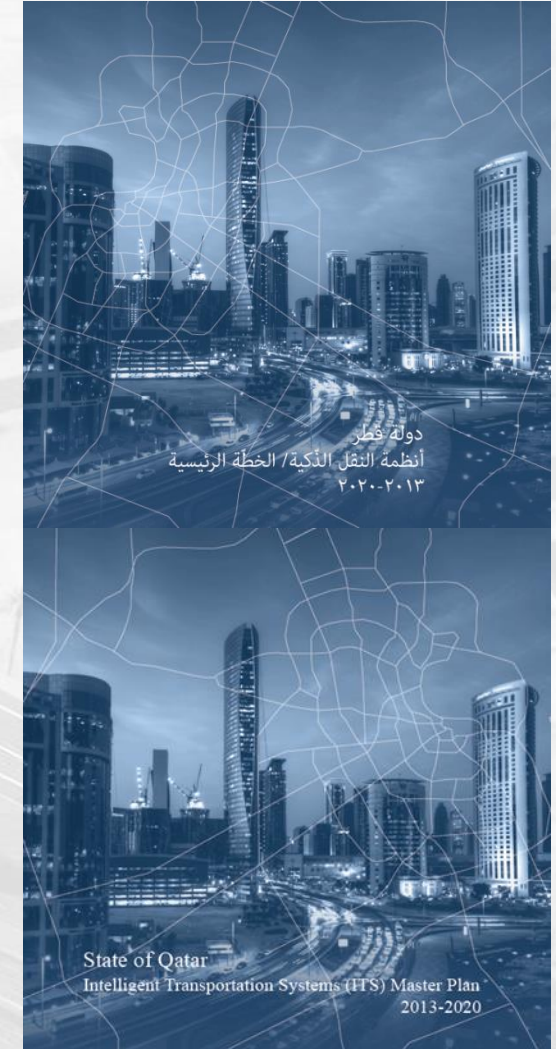
National Transportation Management Centre Master Software

- Integrated Master Software (Systems Integration) specification



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ITS Deployment

- ITS deployment plan mapped and procurement phases identified



KEY

●	ATC
●	CCTV
●	DMSs Strategically Located
●	LCS covering all Lanes and Hardshoulder
●	Detector covering all Lanes and Hardshoulder
■	LPR covering all Lanes and Hardshoulder
▲	WIM in Both Directions
■	OVDS
▲	RWIS
▲	Hardshoulder Enforcement
—	Roadway
—	Tunnel
—	Truck route
—	RWIS Design
■	Corridors (With Hatch)
■	Zones (With Hatch)



2014-15 ITS Packages

13 Implementation Packages

DRAFT



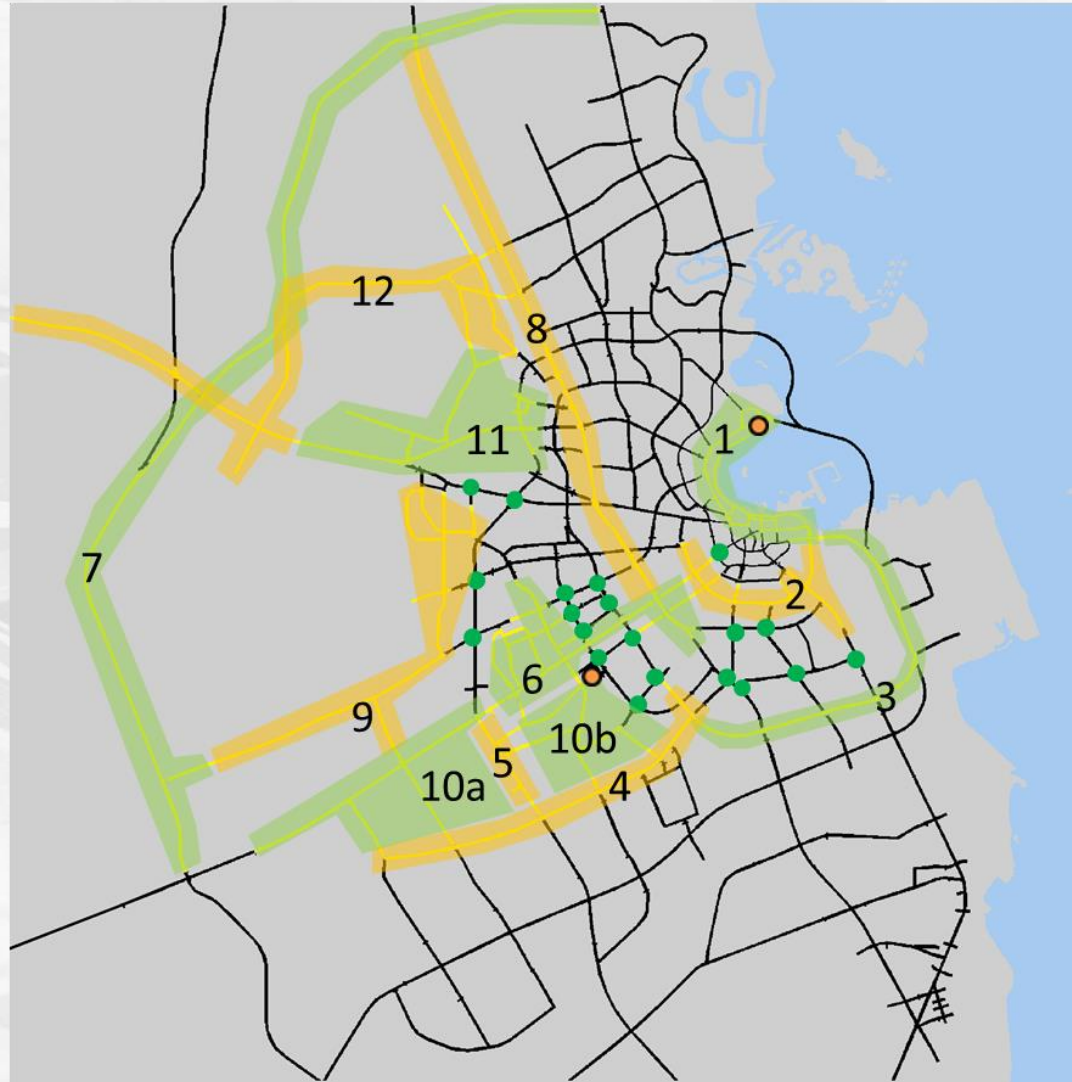
Packages



Transportation/Traffic Management Centre



Temporary ITS



2016 ITS Packages

6 Implementation Packages

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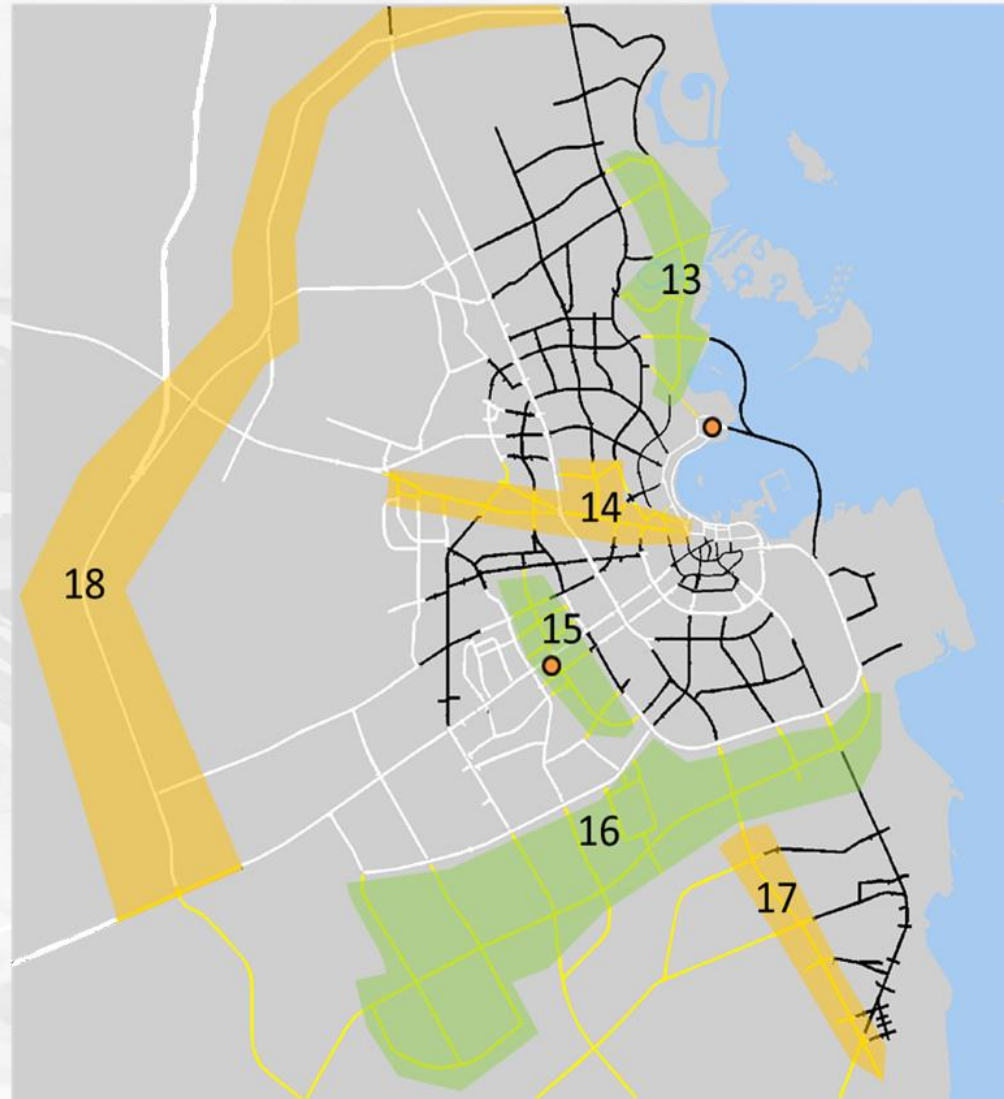
Packages



Transportation/Traffic Management Centre



Temporary ITS






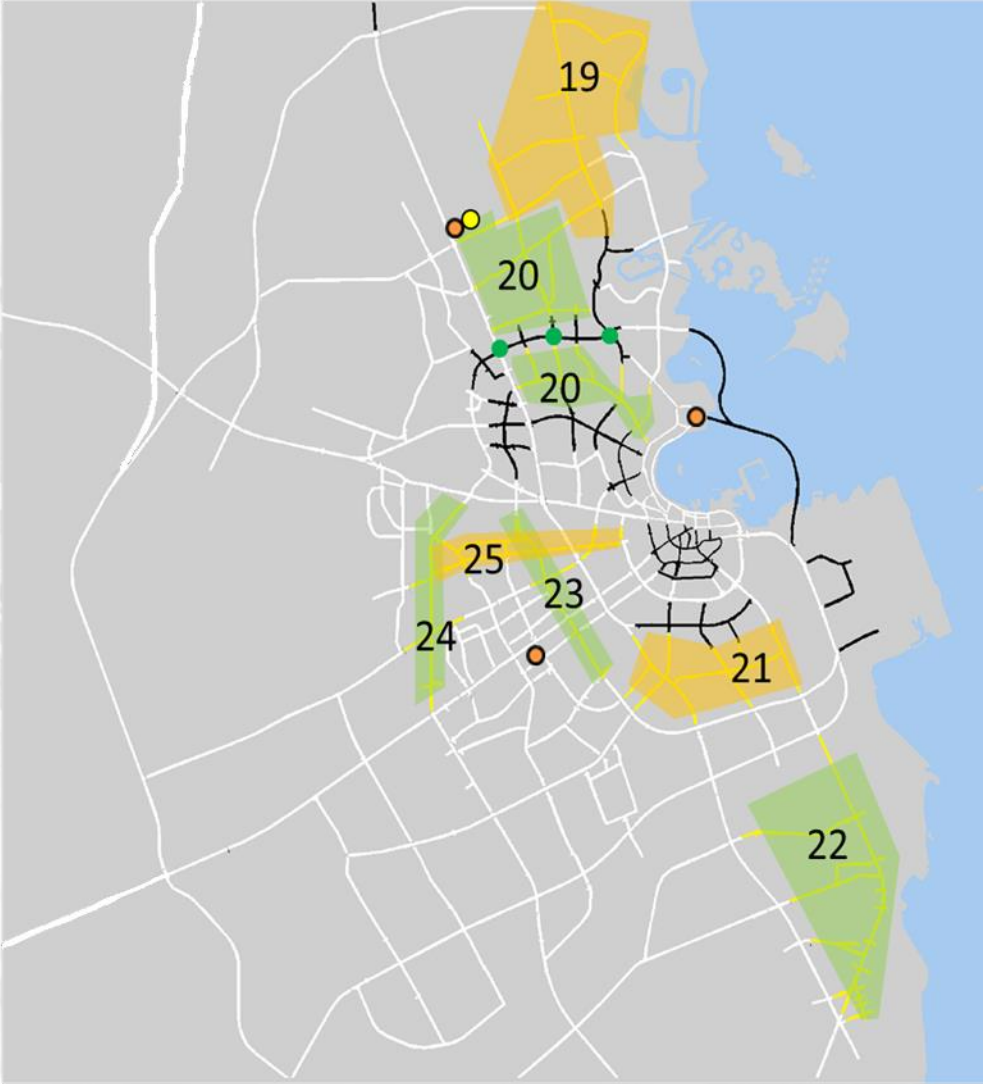
2017 ITS Packages

7 Implementation Packages

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Packages	
Transportation/Traffic Management Centre	
Data Centre	
Temporary ITS	



2018 ITS Packages

6 Implementation Packages

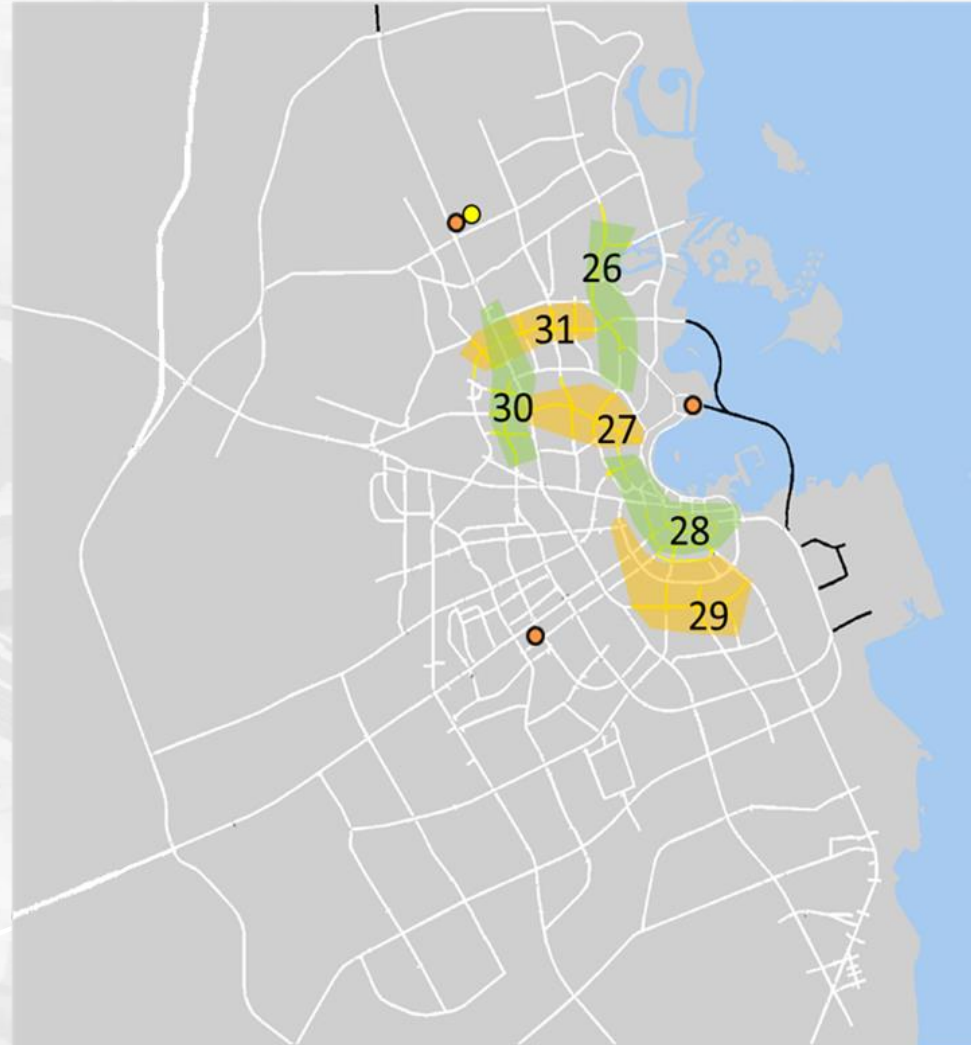
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Packages

Transportation/Traffic
Management Centre

Data Centre

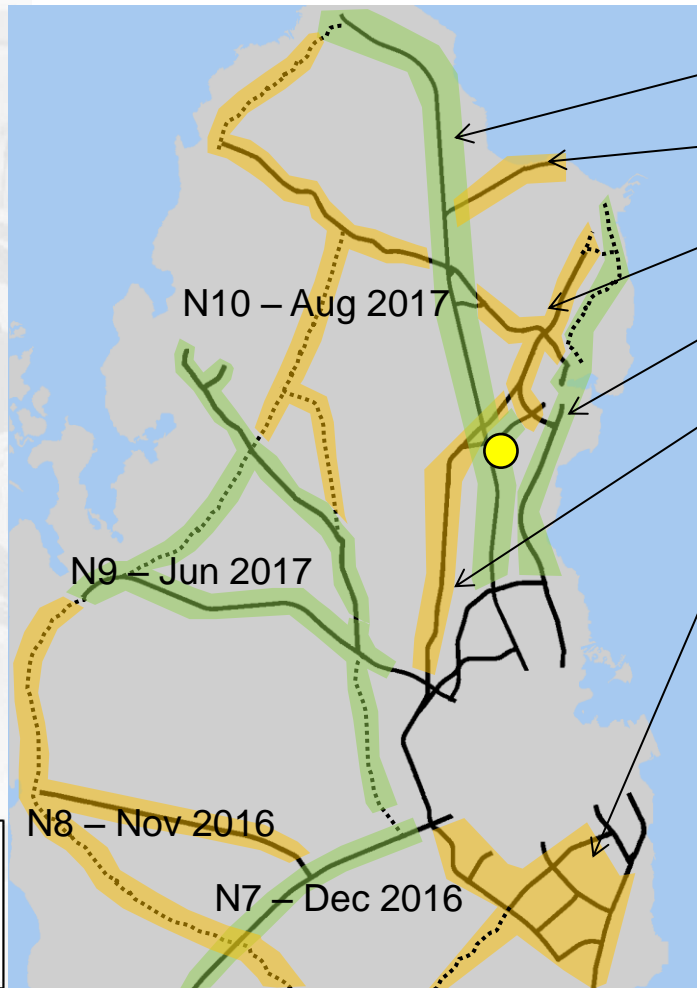
Temporary ITS



National Roadway Implementation Packages

10 Implementation packages

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N1 – December 2015

N2 – December 2015

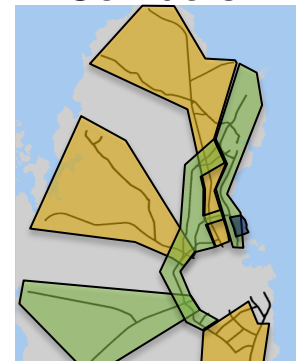
N3 – January 2015

N4 – April 2017

N5 – January 2017

N6 – December 2017

Final National Corridors



Packages



Data Centre



2014 - 2018 ITS Packages

Total of 31 ITS packages providing ITS in and around Doha

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Packages

Transportation/Traffic Management Centre



Data Centre

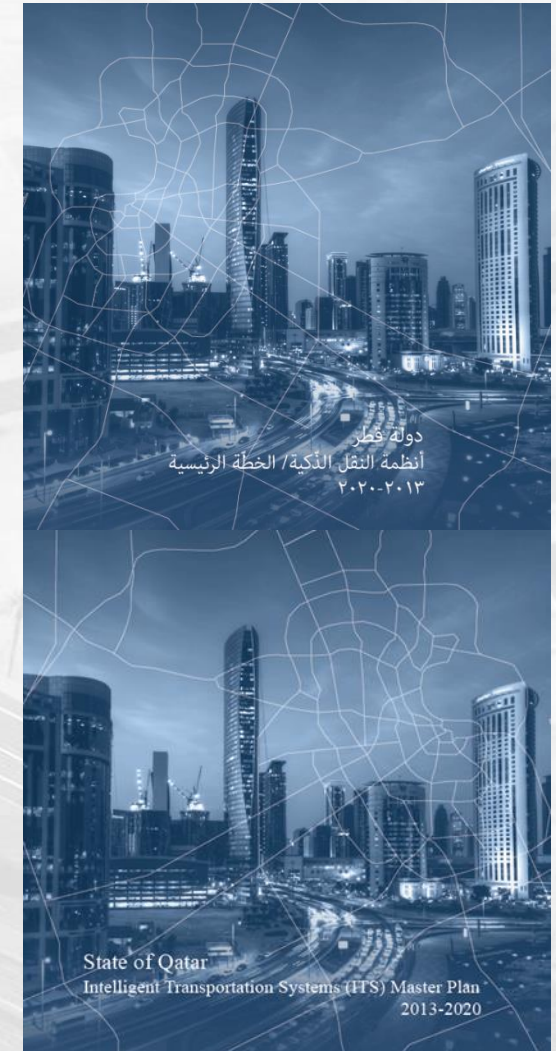


Temporary ITS



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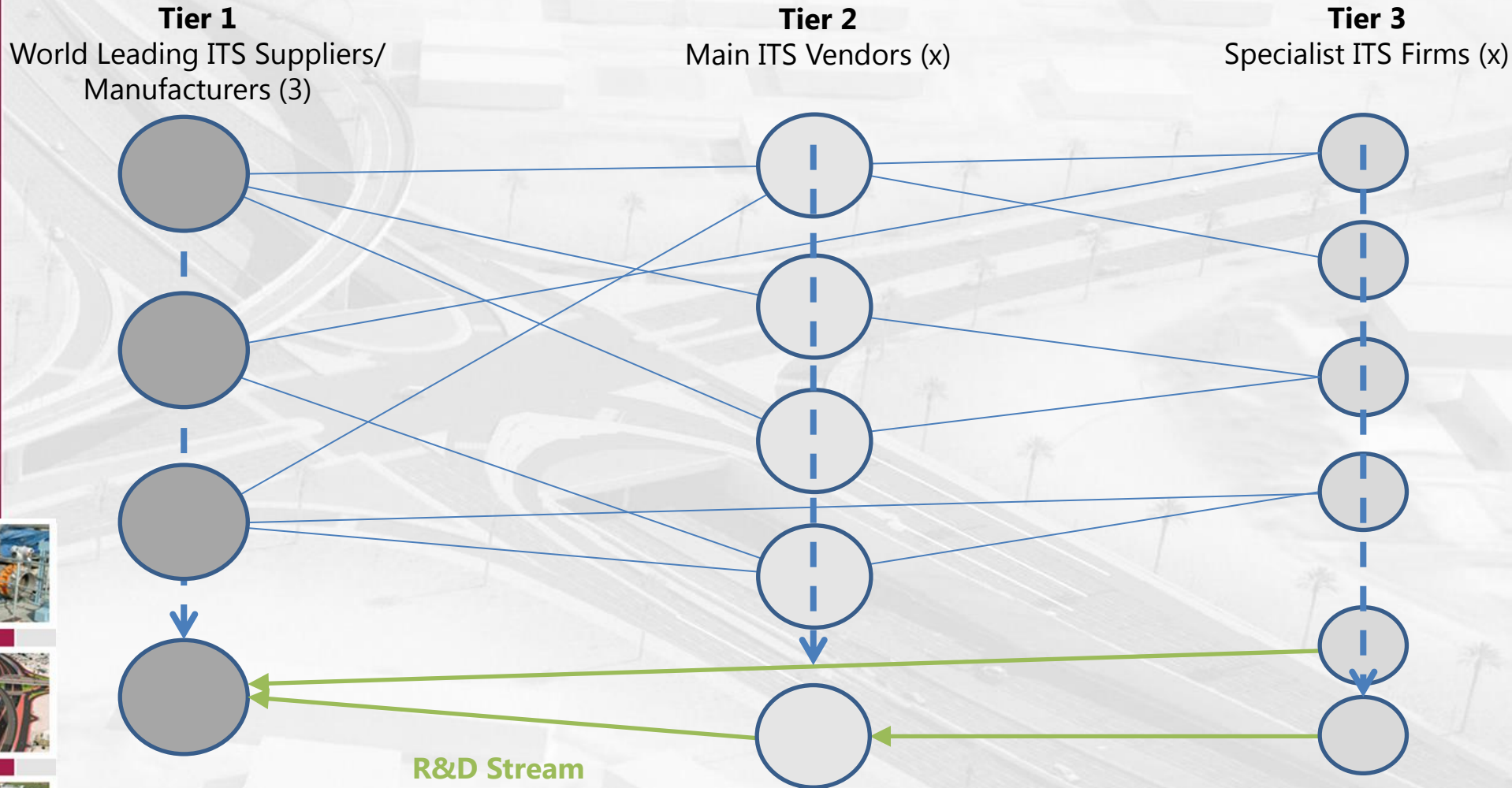


Procurement and Deployment Strategy - estimated Expressway and existing network ITS deployment quantities

	2014-15	2016	2017	2018	Total
Estimated cost (Million QAR)					
Distance (Km)	311.4	314.5	370.5	73	1,069.4
Packages	14	8	12	6	40
Closed Circuit Television	382	441	405	112	1,340
Small Dynamic Message Sign	248	191	288	81	808
Medium Dynamic Message Sign	92	81	163	111	447
Large Dynamic Message Sign	152	111	117	115	495
Detectors	7,392	8,696	8,018	1,940	26,046
Lane Control Signs	2,680	3,635	3,160	971	10,446
License Plate Reader	714	646	658	0	2,018
Full Span Gantries	52	60	20	0	132
Mid Span Gantries	519	661	869	406	2,455
Cantilever	42	26	52	0	120
Ground Mounted Enclosures	1,684	1,433	1,192	294	4,603
Fibre Cable (Km)	742.6	248	365.2	80.5	1,436.3

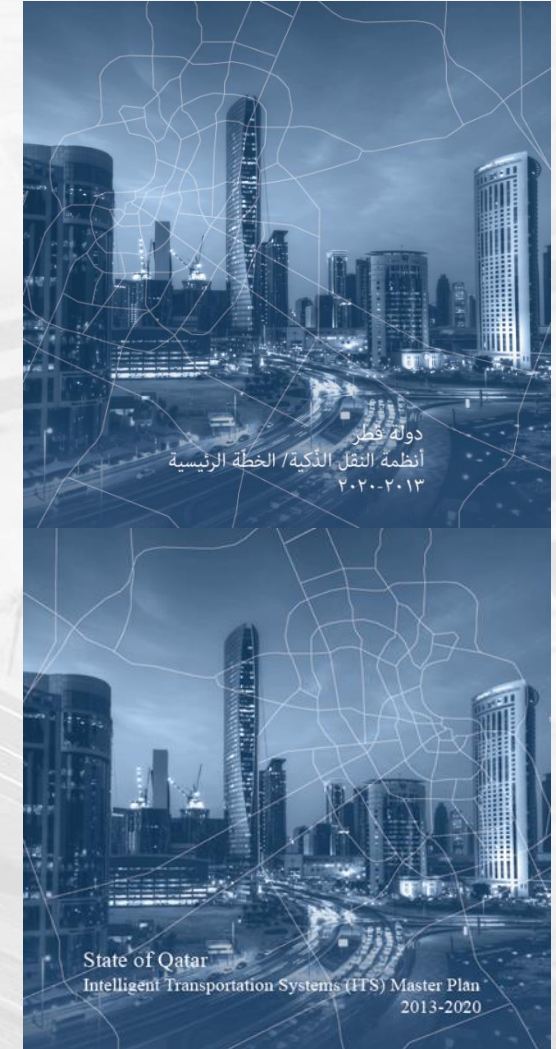
These estimates do not include ITS equipment for proposed new towns and cities being delivered through the Local Roads & Drainage Programme

Procurement - Potential ITS Supply Chain Model



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Q&A

