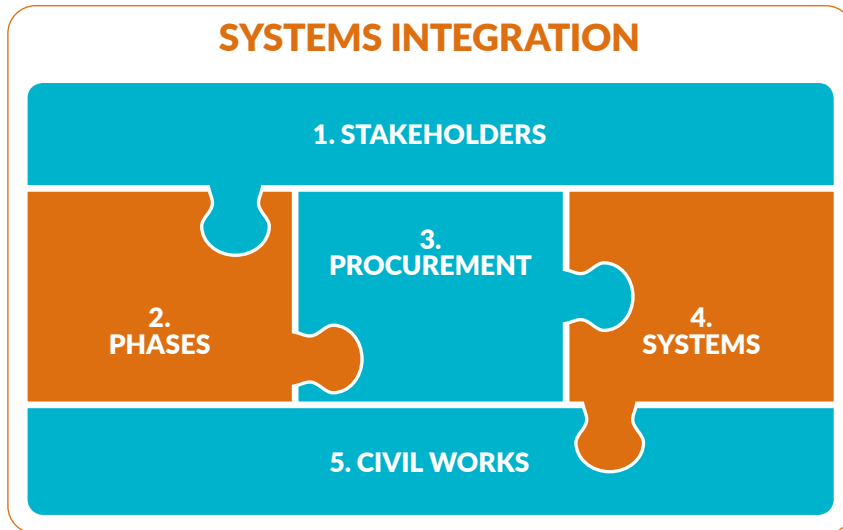


SYSTEM  
INTEGRATION

**SYSTRA**

Delivering sustainable  
transportation systems





## **PERFORMANCE, RELIABILITY, SUSTAINABILITY ADDRESSING THE CHALLENGES OF TOMORROW'S TRANSPORTATION SYSTEMS**

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Mobility projects are becoming more complex as technology enables new options and transport services become more sophisticated and interconnected.

Delivering new transport systems requires broad and deep skills across the entire spectrum of technical disciplines, as well as collaboration and negotiation skills to deal with an increasing array of stakeholders, and to find optimal multi-criteria solutions.

You are confronted with a complex and multidimensional environment. The road to reach an in-operation transportation system can be long!

Strong system engineering and integration skills will be vital to the successful delivery of tomorrow's sustainable transport and mobility services.

These skills are essential to completing complex projects on time, on budget and with the required quality.



## CHANGE THE PARADIGM CONSIDER THE DIFFERENT PERSPECTIVES!

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To address the challenges in a diverse and complex environment, you must think globally. Taking a holistic approach to transport systems is key to providing a robust, competitive & innovative solution, accounting for all present and future issues.



# SUCCESSFUL SYSTEM INTEGRATION IS A BALANCING ACT

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## A MATURE SYSTEM ENGINEERING FRAMEWORK

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The design of complex systems entails the integration of multiple technologies. A system engineering approach delivers optimal performance, guarantees efficient service, and meets your requirements. Our mastery of integration is backed up by a mature system engineering framework, experienced project management office, and processes which are the result of our know-how, proven methodology and decades of experience gained on signature projects all over the world.

### → REQUIREMENTS MANAGEMENT

Assures that all needs are covered, requirements being traced from O&M requirements and Safety policy identification down to subsystems design.

### → V-MODEL QUALITY GATES

Ensure an adequate level of maturity before proceeding into the next phase of delivery during the whole project lifecycle.

### → CONFIGURATION AND CHANGE MANAGEMENT

Guarantees that each delivered baseline matches the expected content meaning that changes are agreed, controlled and shared among stakeholders.

### → SYSTEM ASSURANCE

Guarantees the operating performance and minimizes risks for the project contributing to on-time and on-cost delivery. It embeds Reliability Availability Maintainability (RAM), System Safety, Cybersecurity, Human Factor & Ergonomics and Security Assurance.



## A COMMON LANGUAGE TO BETTER MANAGE ENGINEERING PERFORMANCE

### → DIGITAL TRANSPORT PLANNING WITH QETO

SYSTRA's decision-support tool kit which extracts value from transport data to define relevant and future proof models, to build scenarios and analyse performance, to plan & optimise investments.

### → GEOGRAPHICAL INFORMATION SYSTEM APPLIED TO THE ENVIRONMENTAL SCIENCES

Enables assessing environmental impacts, mapping the constraints and sharing the design of ecological mitigation with third parties.

### → BIM AND DIGITAL TWIN

BIM fosters collaboration by optimising data sharing, interaction and interfaces between all stakeholders. It promotes easy cooperation via the visualisation of realistic structures and ensures robust and reliable design processes.

## A STRONG TECHNICAL INTEGRATION PROCESS

### → INTERFACE MANAGEMENT

Process enhancement through responsibility allocation according to technical discipline delivery scope, ensuring the delivery of the interfaces' functional and performance outcomes.

### → TEST & COMMISSIONING MANAGEMENT

Demonstrates that the Transportation System meets owner expectations and objectives. Our dedicated T&C engineers plan, direct and drive the effort of the overall testing process by:

- Activities definition including sequence and associated time schedule,
- T&C tasks supervision and control
- System test readiness  
(test environment, stakeholders needs...)





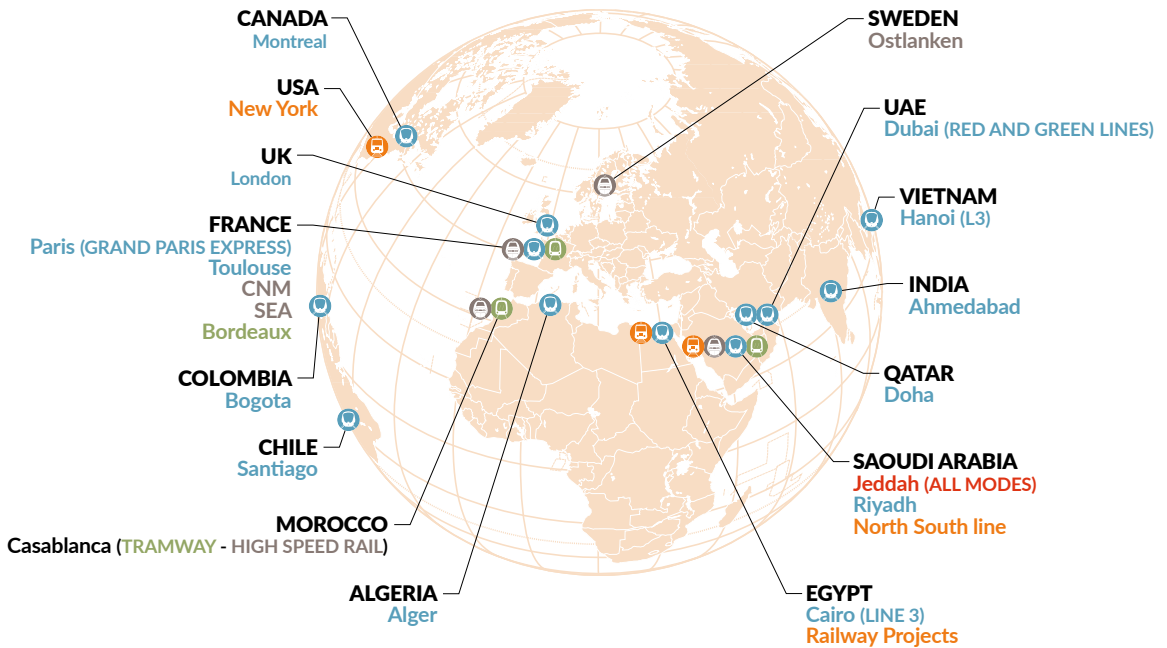
## A STRONG PROJECT MANAGEMENT OFFICE INVALUABLE SUPPORT FOR INTEGRATION PROCESSES

Efficient project management depends on comprehensive management of internal and external interfaces. SYSTRA proposes a resilient system integration strategy, so that you can concentrate on managing your project. Based on Project Management Institute standards, we propose standardized project-related governance processes and facilitate the sharing methodologies, tools and techniques. The PMO provides the support you need, to manage the most critical aspects of system integration.





## OUR SUCCESS STORIES



 CONVENTIONAL RAIL
  HIGH SPEED RAIL
  METRO
  LIGHT RAIL - TRAMWAY

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