

A futuristic cityscape at night, featuring a dense cluster of skyscrapers and a complex multi-level highway interchange. The scene is overlaid with a digital interface consisting of glowing blue lines, nodes, and data points, suggesting a smart city or transportation network. Binary code (0s and 1s) is visible in the background, and a semi-transparent data table is positioned in the upper center. The overall atmosphere is high-tech and modern.

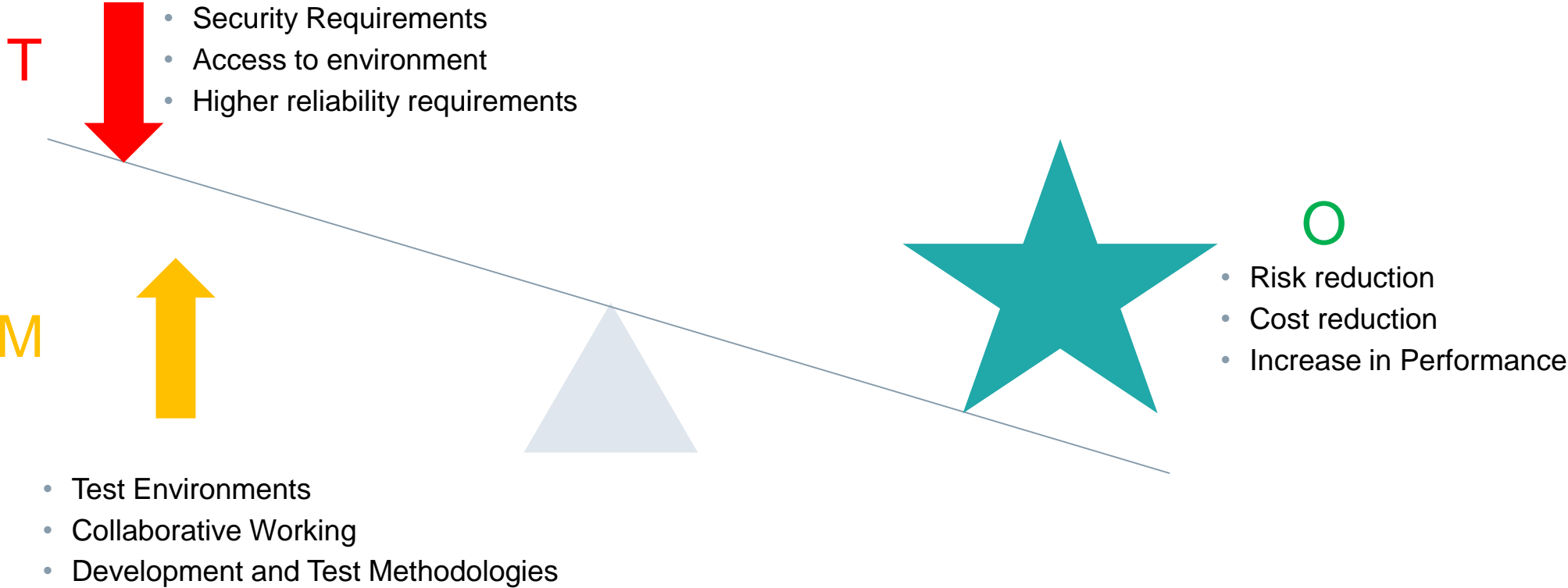
Providing System Resilience as the Goalposts move

Siemens Mobility

Unrestricted © Siemens Mobility 2019

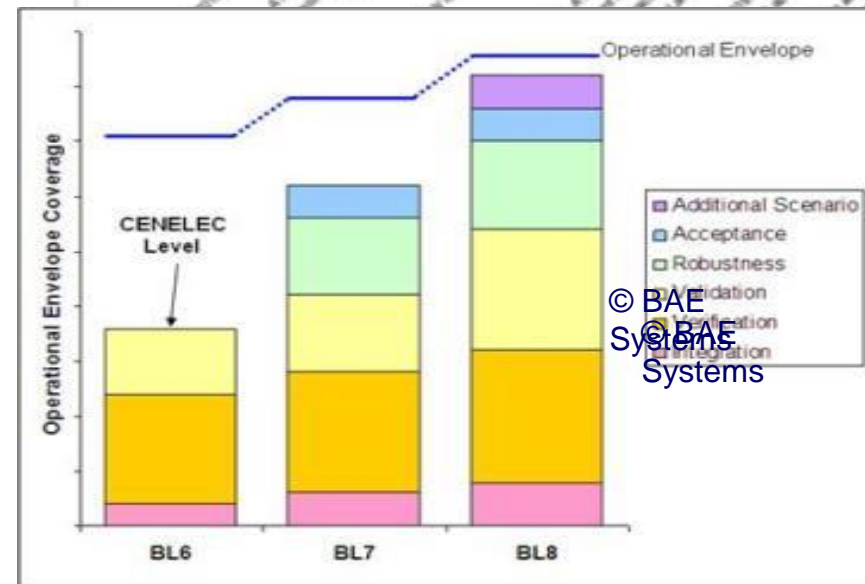
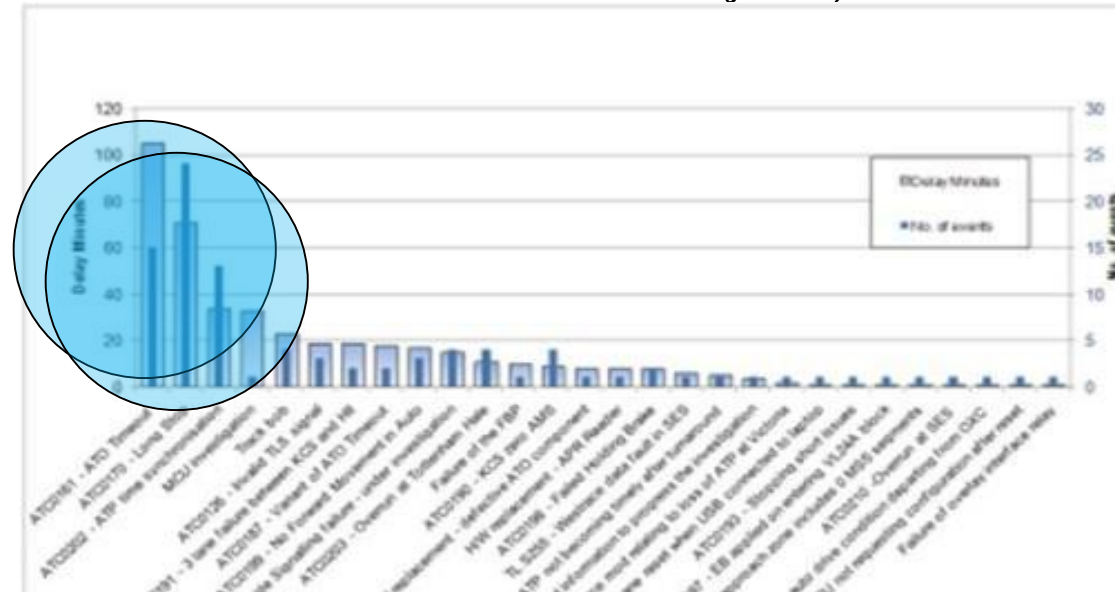
[siemens.com/mobility](https://www.siemens.com/mobility)

Risk Management – Threats; Mitigation and Opportunities

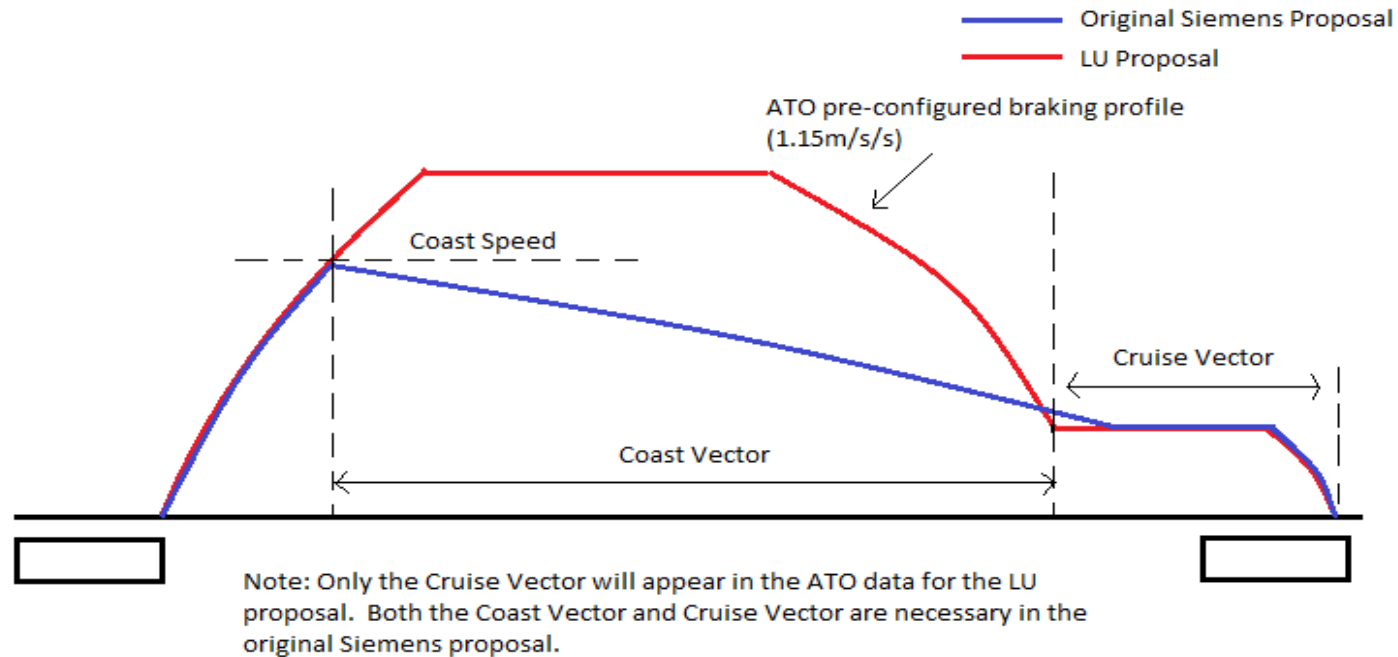


VLU key lessons learnt - Minimising service impact

- ‘Soft start’ migration strategy to exercise systems and people / processes
- Extensive “Over & Backing” of operations between legacy & new control centre to operate new systems with live fallback capability
- Single source of truth for capture service affecting failures
- Continual focus on key reliability issues has driven change strategy
- Test track critical for integration testing but many nights of line testing
- Mature and comprehensive test rigs utilised to reduce costly and inefficient line testing
- “Bust it” scenario rig testing essential to establish robust products and operational envelope



Victoria Line Upgrade 2 - Collaboration in Design



Victoria Line Upgrade 2 - Collaboration Access



Weeks comm Monday		24-Apr-16	01-May-16	08-May-16	15-May-16	22-May-16	29-May-16	05-Jun-16	12-Jun-16	19-Jun-16	26-Jun-16	03-Jul-16
ACCESS TYPE	Sun Night	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												
ACCESS TYPE	Mon Night	Shared	Shared	Shared	Shared	Shared	B/H	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												
ACCESS TYPE	Tue Night	Shared	Shared	Shared	Shared	Shared	Exclusive Test Train	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												
ACCESS TYPE	Wed Night	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												
ACCESS TYPE	Thu Night	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												
ACCESS TYPE	Fri Night	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												
ACCESS TYPE	Sat Night	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared	Shared
CONTRACT												
ACTUAL												

Not Available/Used	
Frustrated Access	
Partial Frustrated Access	
Opportunity	
Available	
Test Train	
Closures/Isolations	

Thameslink – A Shared Understanding of Testing

UK

- SI-Lab in London (NR office)
- Test Track in Hertford North, ETCS National Integration Facility, (ENIF)
- ETCS/ATO simulators at depots (Hornsey, 3BR)
- Testing in the core (possessions), Empty Coaching Stock runs
- Test runs on mainline (night/day, different objectives)
 - AWS/TPWS stand-alone, LNTC, L2/ATO (ECS)
 - Passenger Info System (PIS), Change Traction System (CTS), Selective Door Operation (SDO), Fault Free Running (FFR)
 - Driver's training, operational testing, ...
 - Traffic Management

Germany

- Test Labs in Berlin (Product, Project)
- Test Track in Wildenrath (type tests)



S-Bane Refurbishment - Collaboration

- **Collaboration has been identified as a key success criteria already during tender stage: “The customer recognises that there is a significant opportunity to minimise cost overspend, risks and timescales by adopting a “One Team” collaborative working approach”**

- **Collaboration Agreement** has been agreed as an essential part of the contract from start:

4 levels of collaboration:

- Working Level
- PM-Level
- JSC-Level
- CEO-Level

Common work places of BDK and Siemens

Transparent Communication

Open Time Schedule



S-Bane Refurbishment - Set-up/Scope of a Collaboration Agreement

The Project Collaboration Agreement is derived from the output of a series of joint Forming Seminars held during September and October 2011 at all organisational levels starting with the CEOs from BDK, SAG and SAS.

Paragraph	Executive Mgt.	Joint Steering Committee	Project Mgt.	Project Office
The purpose of the Collaboration Agreement				
The vision and objectives of the project	✓	✓	✓	
Values	✓	✓	✓	✓
Scope	✓	✓	✓	
Teaming	✓	✓	✓	✓
Communication		✓	✓	✓
Decision making		✓	✓	
Conflict resolution		✓	✓	
On-going evaluation of the collaboration				
Evaluation of the Collaboration Agreement				

S-Bane Refurbishment - Our Vision

VISION

WE WILL

- We will deliver a safe, reliable, flexible and cost-efficient S-bane Signalling System
- We will create value for both organisations through a collaboration based on shared goals and a mutual desire to perform with excellence
- We will show the world that this can be done smoothly in a joyful team spirit

S-Bane Refurbishment - Our Critical Success Factors

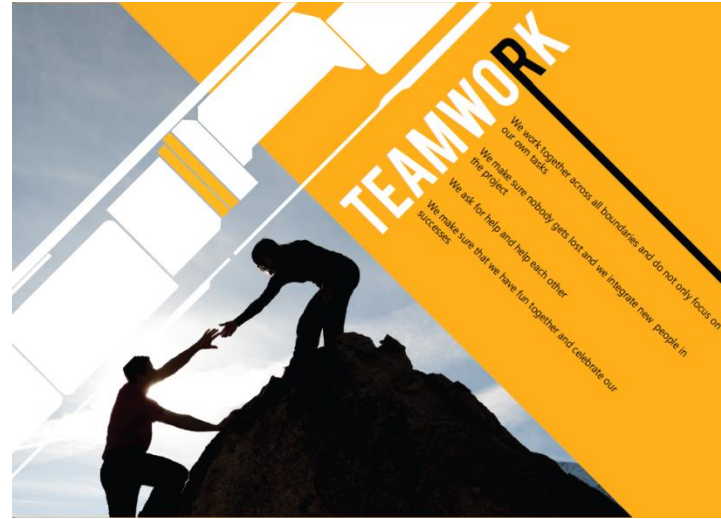
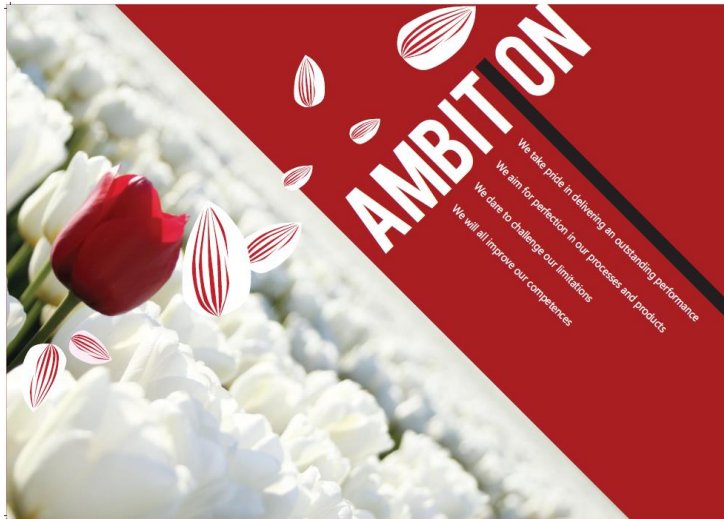


CRITICAL SUCCESSFACTORS



CREATE VALUE	PROFESSIONAL TEAM SPIRIT & FUN
<ul style="list-style-type: none"> Ensure strong fit-for-purpose quality in deliveries Ensure cost effective deliveries Ensure timely deliveries Establish efficient Risk and Value Management Utilize lessons learned Establish clear processes and effective tools Allow for standard products with only a few changes that improve the overall functionality 	<ul style="list-style-type: none"> Internalise the shared objectives Internalise the team values Maintain clear roles and responsibilities Ensure the right competences Enable effective communication and knowledge sharing Improve processes continuously through lessons learned Nurture a strong feedback culture incl. regular personal feedback Celebrate small and big successes
<ul style="list-style-type: none"> Ensure early risk warning Establish a fast change process Ensure a smooth and swift decision making and conflict resolution Empower through clear mandates Ensure efficient communication 	<ul style="list-style-type: none"> Ensure timely communication and involvement of all relevant stakeholders in the collaboration Establish common objectives and targets between stakeholders and the project where feasible
DEAL TIMELY WITH PROBLEMS	STAKEHOLDER MANAGEMENT

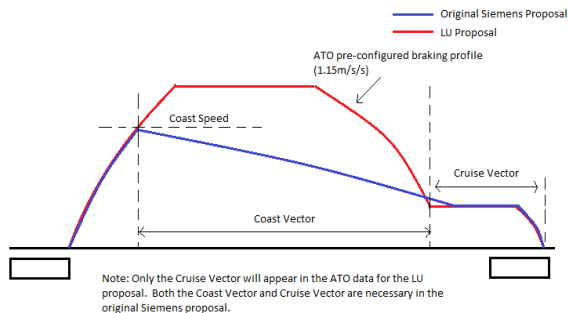
S-Bane Refurbishment - Our Values



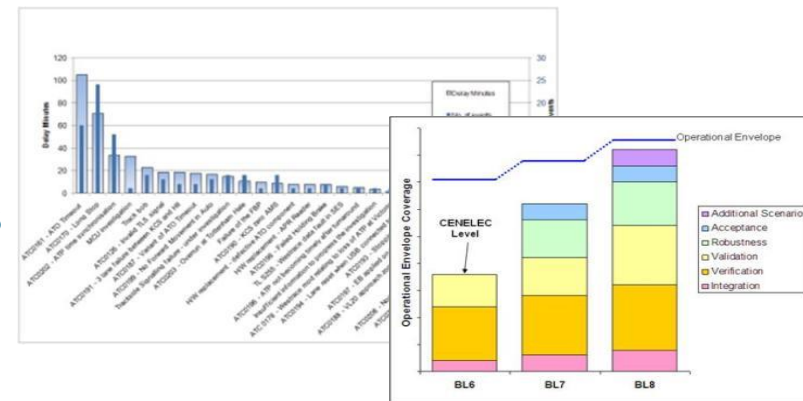
Riyadh Metro - Utilising a World Class Test Environment



Bringing It All Together



Collaboration is the Key to Success



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