About E4 the Stockholm Bypass Project and the M & E Systems

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Suppliers day M & E systems

At the end of the day

- General knowledge about the major project that is the Stockholm Bypass

An insight into:

- The scope of the Contracts
- How our RFQ will be formed
- Boundaries and interfaces between contracts
- The Swedish Transport Administration’s requirements regarding Testing and Validation
- The distribution of responsibilities regarding health and safety during design and production
- Understanding of the Swedish Transport Administration’s ambitions regarding cooperation and implementation.
Filmen från Jon
A city on water and a growing metropolitan region

2 million today
2.5 million by 2030

The County of Stockholm is growing by approximately 100 people a day.
A vulnerable traffic system
The Stockholm Bypass

- Forms an outer ring road together with Norrortsleden and Tvärförbindelse Södertörn
- Links north and south and our regional urban cores
- Creates a single market for jobs, homes and services

Källa: Regional utvecklingsplan för Stockholmsregionen, RUFS
Changes of plans from 1960- today

Kungshattssleden  Västerleden  Förbifart Stockholm
The Stockholm Bypass

**Length:** just over 21 km

**Total length:** just over 50 km

**Tunnel:** just over 18 km

**Travel time:** approximately 15 min

**No. of lanes:** three in each direction

**Junctions:** six

**Traffic 2035:** 140,000 vehicles/day

**Cost:** EUR 3.1 billion (2009 prices)

Construction time about 10 years
3 consulting contracts (FSK) and 8 production contracts FSE

- FSK07 Basis for Design
- FSK09 RFQ FSE901-905
- FSK10 RFQ for Artistic Design
- FSE815 Tele- and safety system during construction phase
- FSE816 Doors in traffic space
- FSE705 Artistic Design
- FSE901
- FSE902
- FSE903 (Mechanical & Electrical systems)
- FSE904
- FSE905
Safety design provide a safe journey

The safety concept has been elaborated in collaboration with other authorities

- Parallel tunnels without oncoming traffic
- 24/7 surveillance / CCTV
- Frequent emergency exits
- Fixed firefighting system
- Detectors
Artistic design

Artistic design in The Stockholm Bypass
Mechanical and Electrical Systems

- Plant Control and Monitoring System
- Communications-platform
- CCTV
- Radio
- Tunnel Fire Detection
- Emergency Telephones
- Mobile Telephony
- Tunnel Detectors
- Incident detecting

- Electrical Power 36kV/12kV
- Electrical Systems and Ducting/Conduits
- Lighting
- HVAC

- Tunnel Ventilation
- Fire Ventilation
- Air-intake and exhaust stations
- Jet fans in the traffic area

- Traffic Control
- Traffic Management
- Motorway control system, MCS
- Variable message signs VMS
- Traffic Message Signs TIS
- Barriers

- Drainage Systems
- Waste water station
- Pump stations
- Fixed Firefighting System in tunnel

M&E

Contracts
2 Traffic Facilities
• The Client (the Swedish Transport Administration) will be responsible for coordination between the contracts
• All parties involved will be dependent on each other
• Contractors will be responsible for some specific areas of coordination.
• The contractor plans, leads and performs the contract work.
Challenges

- Coordination with construction contracts
- Work at several sites simultaneously
- Schedule, *on the critical path*
- Coordination between FSE 901-905
- 3D models - BIM
- New technology
- Geographical scope
Guiding stars

Available

Committed

Open

Constructive

Trustworthy
Collaboration
Important activities

• Co-location of organizations based on the specific contract/project
• Shared performance management
• Shared risk management
• Conflict resolution method
• Continuous monitoring, improvement and benchmarking
• Transparency on shared matters
Effects of collaboration

- Methods
- Shared Goals
- Right Attitude
Health & safety

• Focus on Health and Safety
• No one should be injured or die on our workplaces
• The Transport Administration is the Client, and is therefore responsible for Health and Safety
• Trafikverket är BAS-P och BAS-U
• Some tasks will be delegated
Thank you!