E6-Dovrebanen
Collaboration i practice

AGENDA

- Presentation of the project
- Use of 3D in planning and construction
Key data

- 45 min north of Oslo, 22 km road and 17 km railway.
- 4 lane E6, 100 km/h
- Double track railway, 200 km/h
- Common county plan and zone plan (2005-2010)
- Contemporary construction in one joint project
- Cost approx 1050 mill EUR
- Financing, partial state/tollroad
- Construction 2,5 years (2012-2014)
- Divided into three main contracts (trough projecting and construction)

Social objectives

**E6**
- Reduce the number of serious accidents
- Improved capacity and accessibility → more predictable time of travel (Hamar-Oslo, 120 km: 1h20min)
- Stimulate growth and development in the region

**Dovrebanen (railway)**
- Improved capacity and accessibility → time of travel Hamar-Oslo: 1h
- (To day the most busy one track railway in Norway)
Why 3D?

Planning process:
- Information to politicians, inhabitants and travellers
- Active participation in the process

Projecting process:
- Technical and interdisciplinary control, continuously

During construction:
- Data for surveying and machine control
- Updating «as built» continuously, basis for management and maintenance
- Quality control/documentation

Projecting process E6-Dovrebanen

- Three consultant contracts
- Joint kick-off meeting

Matrix organization:
- Parcel (geography)
- Disciplines

Rough division of responsibility for principles:
- FP1 (ViaNova): Railway
- FP2 (Norconsult): Tunnel
- FP3 (Cowi): Road

Redistribution of tasks between consultants
(Controlled by available competence/capacity and after «give and take»)
Why 3D?

- Common platform for all disciplines
- 3D-model as working basis in meetings
- Reduced number of errors in the projecting process → fewer number of errors during construction
- Improve quality of tenders

3D-projecting - basis

Central conditions and requirements defined in consultant tender (for preparing construction plans):

- Projecting in 3D for all disciplines
- Define model deliveries
- Define objekttypes (volumes, surfaces, lines, points)
- Object codes
- Define quality
3D-projecting – common rutines

NOTAT
3D Samordningsmodell
Felles rutiner og metodikk (FP1, FP2, FP3)

3D-prosjektering – types of models

- Disipline models (one for each discipline)
- Interdisciplinary model
- Coordinated model, with texture
3D-prosjektering - prosess

- Key to success!
- Regularly interdisipline meetings
- Deliveries and distribution requirements
- Structure conflict management (positions)

DEMO FP1