

The RiskBIM concept

or at least some thoughts for a concept

OECD-HRP/NKS decommissioning workshop – 6-7 December 2018, Lillehammer

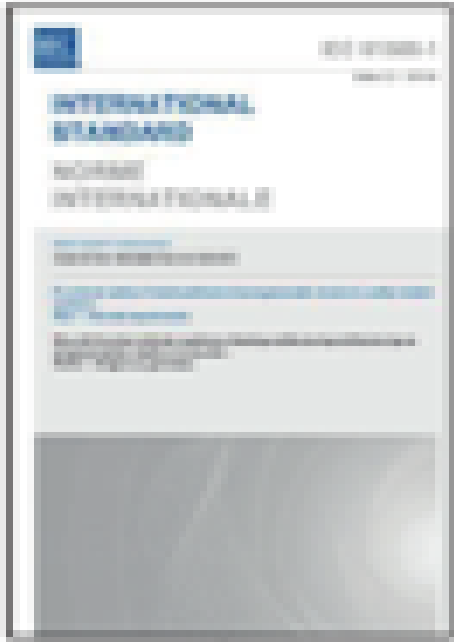
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Outline

Some bits about the current practice within railway working with RAMS
and future directions,
and relevancy for decom

- The Law
- The Practise
- The Future
- The Decom link

The Law: EN 50126-1 about RAMS within railway



- Requirement 7.4.2.1: Risk Assessment
 - “...structured process for ...identifying undesired events...the causes....control measures...in case of explicit risk estimation then identify frequencies...consequences”
- Requirement 7.4.2.2 Hazard Log
 - “A hazard log shall be established as the basis for on-going risk management for safety....”

Reference to:

- EN 50126/8/9 series, CENELEC

The Practice

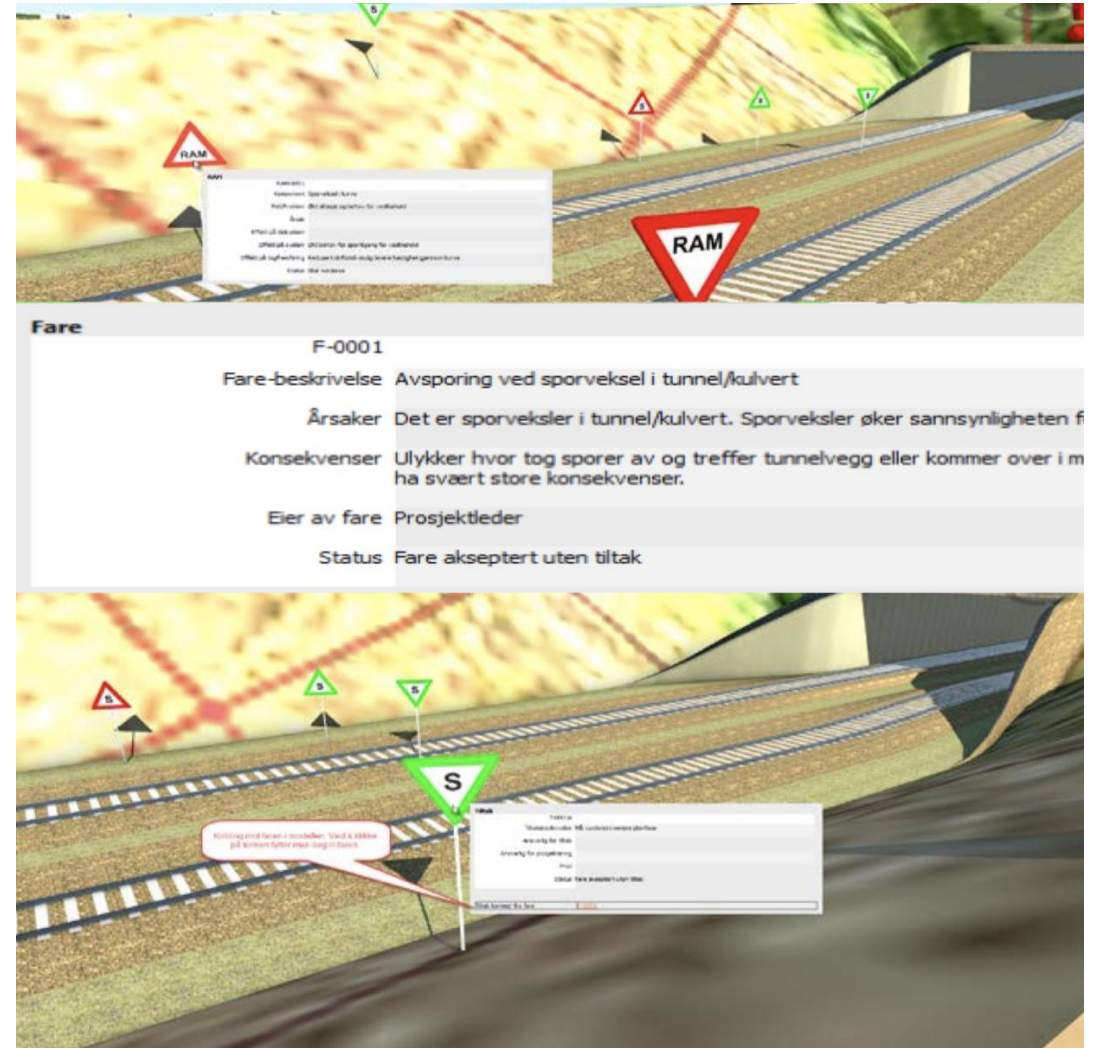


Illustrations from Bane NOR in
f-b.no 27. Nov 2018

New station and tracks in Fredrikstad

The Practise

- All engineering fields define their solution with BIM (e.g. track, electro, signalling, water, geology,...)
- All engineering models are combined into one and assessed
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- RAMS uses the information within the model for system definition and assessments
- Results from RAMS assessments are not (some few exceptions) shown in the model, managed separatly



The Future

Have applied to NFR for funding a project named **RiskBIM**, focusing on developing BIM capabilities supporting RAMS and risk management within transport

Partners: Bane NOR, SVV, COWI, Multiconsult, IFE, NTNU

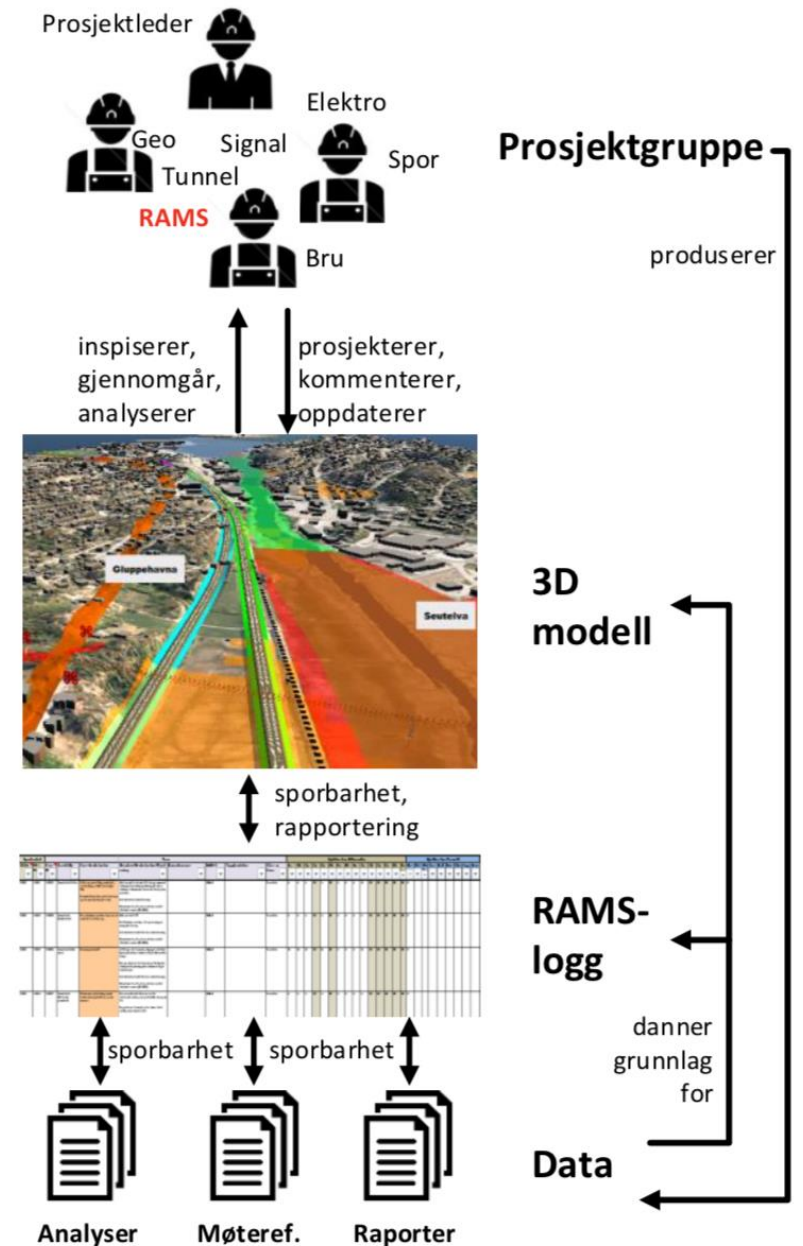
Budget: 15 MNOK, requested funding 7MNOK

Partners clearly express that within road and railway solutions development in Norway the BIM environment is the main platform for expressing and developing their solutions and that proper RAMS, SHA and Risk support is absent.

In Jan/Feb 2019 we know if application receives NFR support

The Future

- RAMS info in BIM models, need better visualisations and new interaction for RAMS in BIM
- BIM integrated with Hazard Log
- Quicker information loops between development and RAMS, more lean process
- Advanced methods in BIM, e.g. supporting automatic/semi-automatic assessments or requirements verification
- New ways of information exchange and cooperation, new methods and work processes



The Future

- Turning from static analysis in the format of documents into digitalised, flexible, dynamic and connected to models
- Semi-automatic and automatic analysis
- Looking at the uses of VR and AR for simulation and training
- New work processes and information sharing
- Holistic risk picture, risk visualisation, risk awareness, decision support

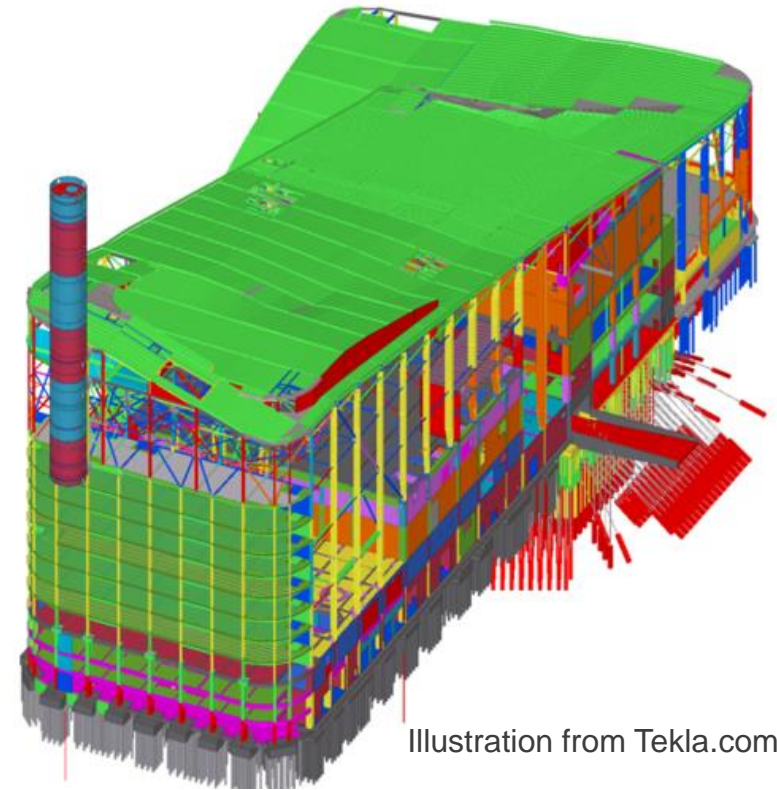


Illustration from Tekla.com

The Decom link



Each step of the process includes risks that must be addressed whether we build something up or something down



RiskBIM addresses road and rail development. It's other kinds of risks. The general process and the methods used still has many similarities



We all need powerful tool support for risk management and maybe some changes in the work processes

