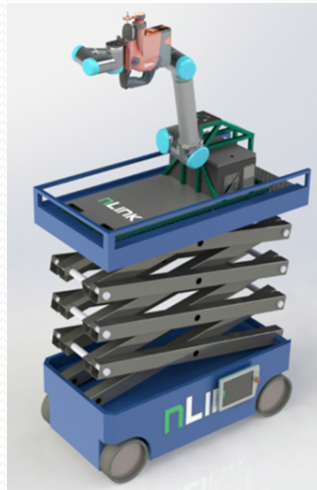


# buildingSMART konferansen 2015

BIM og robotteknologi



Per-Kristian Westermann



Halvard Sletvold

# Bakgrunn

- Borerobot - IFU-prosjekt
  - nLink AS og Vintervoll AS

Kan borerobotteknologi integreres med BIM?

# Momenter

- BIM
- Bruksområder borerobot
- HMS og effektivisering
- Produktivitet
- Programvare/filformater
- Posisjonering



# Momenter

- Modellering
- Eksport av borehullinformasjon
- Import til borerobot

```

RIE-Egen modell Modelleringscase 2001 - Notisblokk
Fil Rediger Format Vis Hjelp
#186= IFCPRODUCTDEFINITIONSHAPE($,$,#1833);
#190= IFCFOOTING('3h_d0STA3of1ok0CNL0',#41,'SurveyMarker:-Referansepunkt:-1311396',$,'SurveyMarker:-Referansepunkt-','#104,#186);
#199= IFCMATERIAL('Black');
#202= IFCPRESENTATIONSTYLEASSIGNMENT(#1733);
#204= IFCSTYLEITEM($,#202,$);
#206= IFCSTYLEDEFINITIONREPRESENTATION(#68,'Style','Material',(#204));
#209= IFCMATERIALDEFINITIONREPRESENTATION($,$,#206,#199);
#212= IFCPROPERTYSETVALUE('Offset',$,IFCLENGTHMEASURE(0.));
#213= IFCPROPERTYSETVALUE('Vinkel X',$,IFCPLANEANGLEMEASURE(0.));
#214= IFCPROPERTYSETVALUE('Bor hulllet',$,IFCBOOLEAN(F.));
#215= IFCPROPERTYSETVALUE('CQcoordinatesZ',$,IFCLENGTHMEASURE(0.));
#216= IFCPROPERTYSETVALUE('Enable Analytical Model',$,IFCBOOLEAN(T.));
#217= IFCPROPERTYSETVALUE('Rebar Cover - Top Face',$,IFCLABEL('Rebar Cover Settings: Rebar Cover 1'));
#218= IFCPROPERTYSETVALUE('Monteres i hulllet',$,IFCTEXT(''));
#219= IFCPROPERTYSETVALUE('Toleranse X',$,IFCLENGTHMEASURE(0.));
#220= IFCPROPERTYSETVALUE('Hulldybde',$,IFCLENGTHMEASURE(0.));
#221= IFCPROPERTYSETVALUE('Host Family Description',$,IFCTEXT(''));
#222= IFCPROPERTYSETVALUE('Phase Created',$,IFCLABEL('New Construction'));
#223= IFCPROPERTYSETVALUE('Rebar Cover - Bottom Face',$,IFCLABEL('Rebar Cover Settings: Rebar Cover 1'));
#224= IFCPROPERTYSETVALUE('Moves with Grids',$,IFCBOOLEAN(T.));
#225= IFCPROPERTYSETVALUE('Fill',$,IFCBOOLEAN(T.));
#226= IFCPROPERTYSETVALUE('Markeringsfarge',$,IFCTEXT(''));
#227= IFCPROPERTYSETVALUE('Vinkel Y',$,IFCPLANEANGLEMEASURE(0.));
#228= IFCPROPERTYSETVALUE('Switch Marker',$,IFCBOOLEAN(T.));
#229= IFCPROPERTYSETVALUE('Elevation at Bottom',$,IFCLENGTHMEASURE(0.));
#230= IFCPROPERTYSETVALUE('Level',$,IFCLABEL('Level: Level 1'));
#231= IFCPROPERTYSETVALUE('Host',$,IFCTEXT('Level: Level 1'));
#232= IFCPROPERTYSETVALUE('Toleranse Y',$,IFCLENGTHMEASURE(0.));
#233= IFCPROPERTYSETVALUE('Hull diameter',$,IFCLENGTHMEASURE(0.));
#234= IFCPROPERTYSETVALUE('CQangle',$,IFCPLANEANGLEMEASURE(360.));
#235= IFCPROPERTYSETVALUE('CQcoordinatesY',$,IFCLENGTHMEASURE(3433.01886404434));
#236= IFCPROPERTYSETVALUE('Rebar Cover - other Faces',$,IFCLABEL('Rebar Cover Settings: Rebar Cover 1'));
#237= IFCPROPERTYSETVALUE('Reference Nr. on/off',$,IFCBOOLEAN(F.));
#238= IFCPROPERTYSETVALUE('Reference Nr.',$,IFCTEXT('1'));
#239= IFCPROPERTYSETVALUE('CQcoordinatesX',$,IFCLENGTHMEASURE(-1971.69242240081));
#240= IFCPROPERTYSETVALUE('Status utflyt/00f8/v00t',$,IFCBOOLEAN(F.));
#241= IFCPROPERTYSETVALUE('Circle',$,IFCBOOLEAN(T.));
#242= IFCPROPERTYSETVALUE('Assembly Description',$,IFCTEXT(''));
#243= IFCPROPERTYSETVALUE('Model',$,IFCTEXT(''));
#244= IFCPROPERTYSETVALUE('Ommeass_title',$,IFCTEXT(''));
#245= IFCPROPERTYSETVALUE('Assembly Code',$,IFCTEXT(''));
  
```

Borehull - Notisblokk

| #          | Navn                     | Utsatt               | Utsatt          | Utsatt           | Utsatt | Utsatt | Utsatt |
|------------|--------------------------|----------------------|-----------------|------------------|--------|--------|--------|
| "Borehull" | ""                       | ""                   | ""              | ""               | ""     | ""     | ""     |
| "Level"    | "CQParentFamilyAndType"  | "CQParentFamilyMark" | "Type"          | "CQcoordinatesX" | ""     | ""     | ""     |
| "Level 1"  | "                        | "-Referansepunkt-"   | "-1888"         | "4198"           | "1000" | "0.0"  | ""     |
| "Level 1"  | "                        | "Elektro 5,5mm"      | "-1692"         | "4063"           | "0"    | "5.5"  | "42"   |
| "Level 1"  | "                        | "Elektro 8mm"        | "-1853"         | "3795"           | "0"    | "8.0"  | "93"   |
| "Level 1"  | "                        | "Elektro 10mm"       | "-1443"         | "3795"           | "0"    | "10.0" | "102"  |
| "Level 1"  | "                        | "Generisk"           | "-2103"         | "3657"           | "0"    | "5.5"  | "42"   |
| "Level 1"  | "                        | "Himling"            | "-2421"         | "4171"           | "0"    | "8.0"  | "47"   |
| "Level 1"  | "                        | "Rør"                | "-1608"         | "4270"           | "0"    | "10.0" | "47"   |
| "Level 1"  | "                        | "Sprinkler"          | "-2521"         | "3741"           | "0"    | "8.0"  | "47"   |
| "Level 1"  | "                        | "Ventilasjon"        | "-2195"         | "4382"           | "0"    | "10.0" | "102"  |
| "Level 1"  | "Glamox C10-P1 : C10-P1" | "49"                 | "Elektro 5,5mm" | "-541"           | "-541" | "4619" | ""     |
| "Level 1"  | "Glamox C10-P1 : C10-P1" | "49"                 | "Elektro 5,5mm" | "-541"           | "-541" | "6139" | ""     |

# Spørsmål?

[www.vintervoll.no](http://www.vintervoll.no)

[www.nlink.no](http://www.nlink.no)

[www.hig.no](http://www.hig.no)

[www.buildingsmart.no](http://www.buildingsmart.no)

