# Frogner bruer
# - Tegningsløst prosjekt

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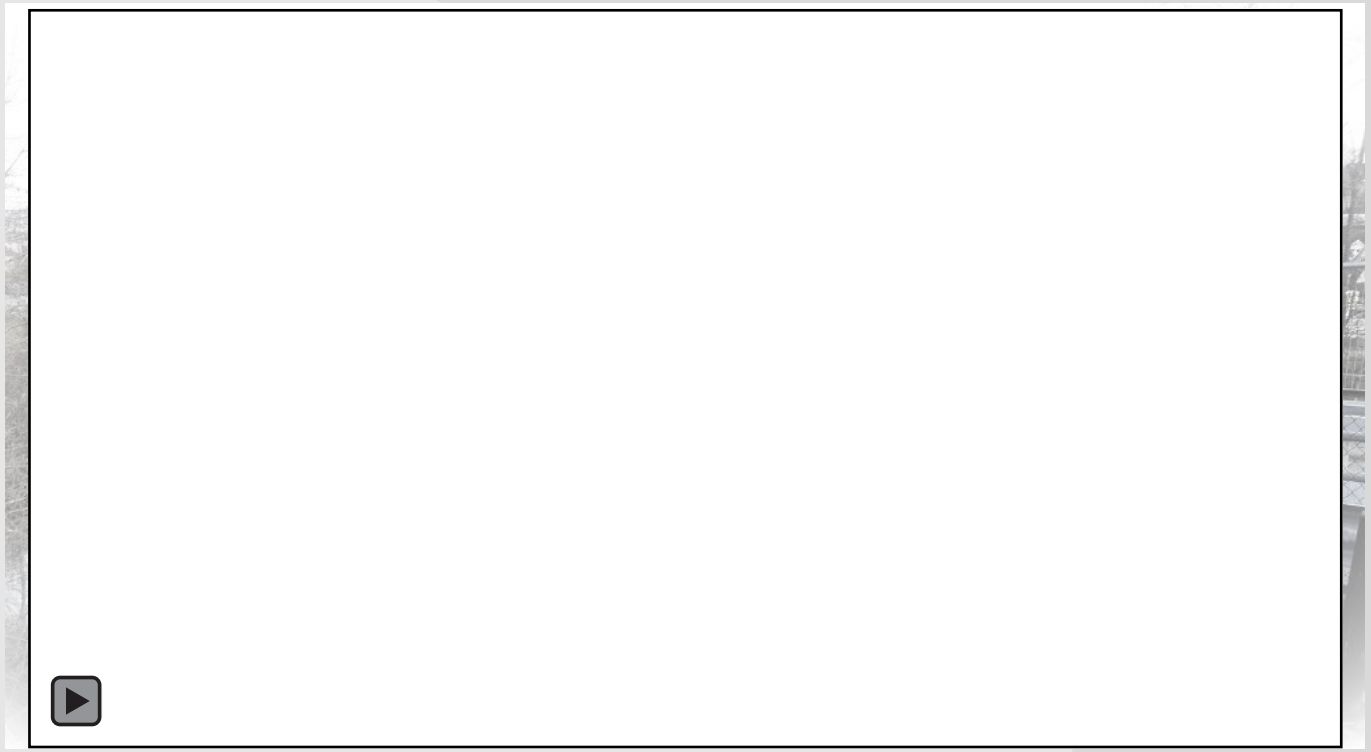
# Frogner Bruer

- Fv.260
  - G/S+veibru ~ 100m
  - Samvirkebru
  - Tegningsløst
- Totalentreprise
  - Implenia Norge AS
  - Total kostnad ca. 105mill.
- BH: Akershus Fylkeskommune
  - BHR: SVV

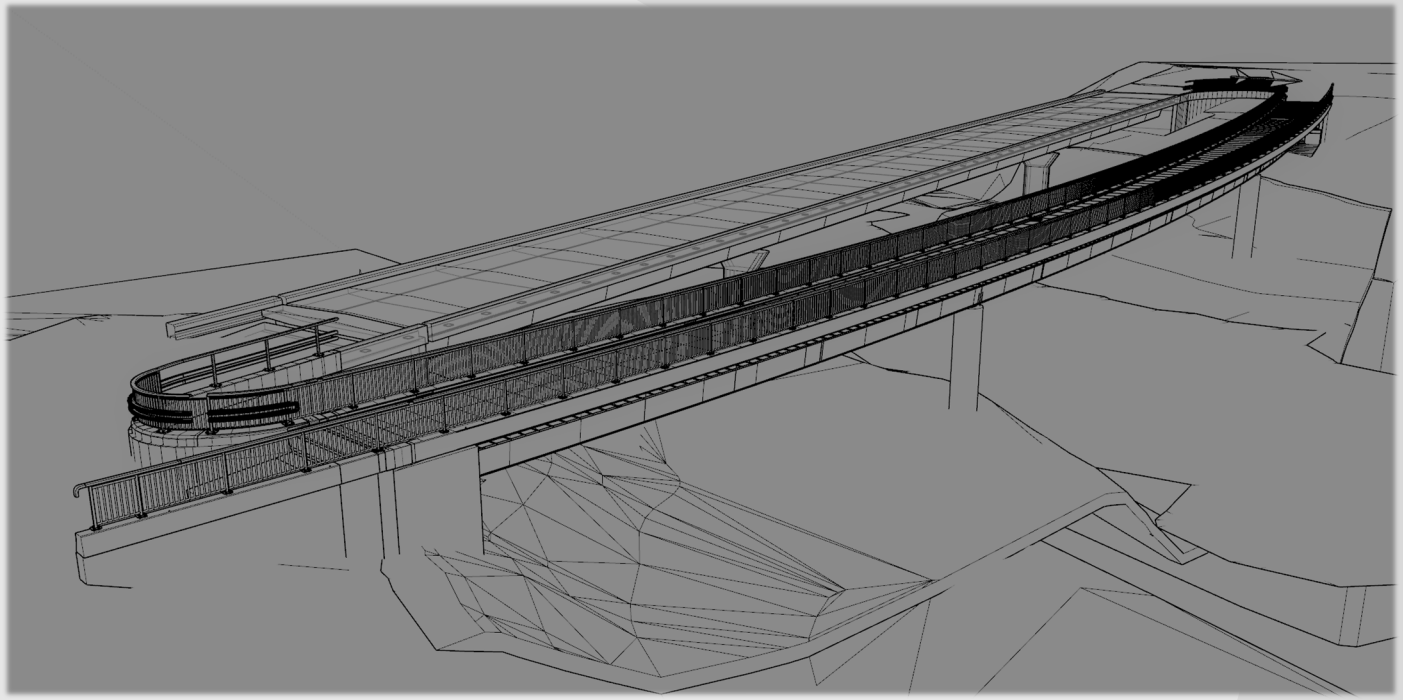


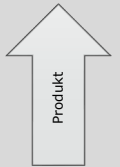
Pågår - ferdigstilles August 2020

# Tilnærming

- Tegningsløst
  - Erfaringer
  - Ambisjon
  - Mulighet

- IFC
  - Egnet format
  - Åpent
  - Tilpasninger

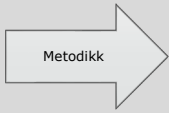


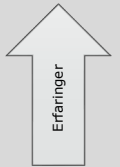


# Arbeidsmetodikk

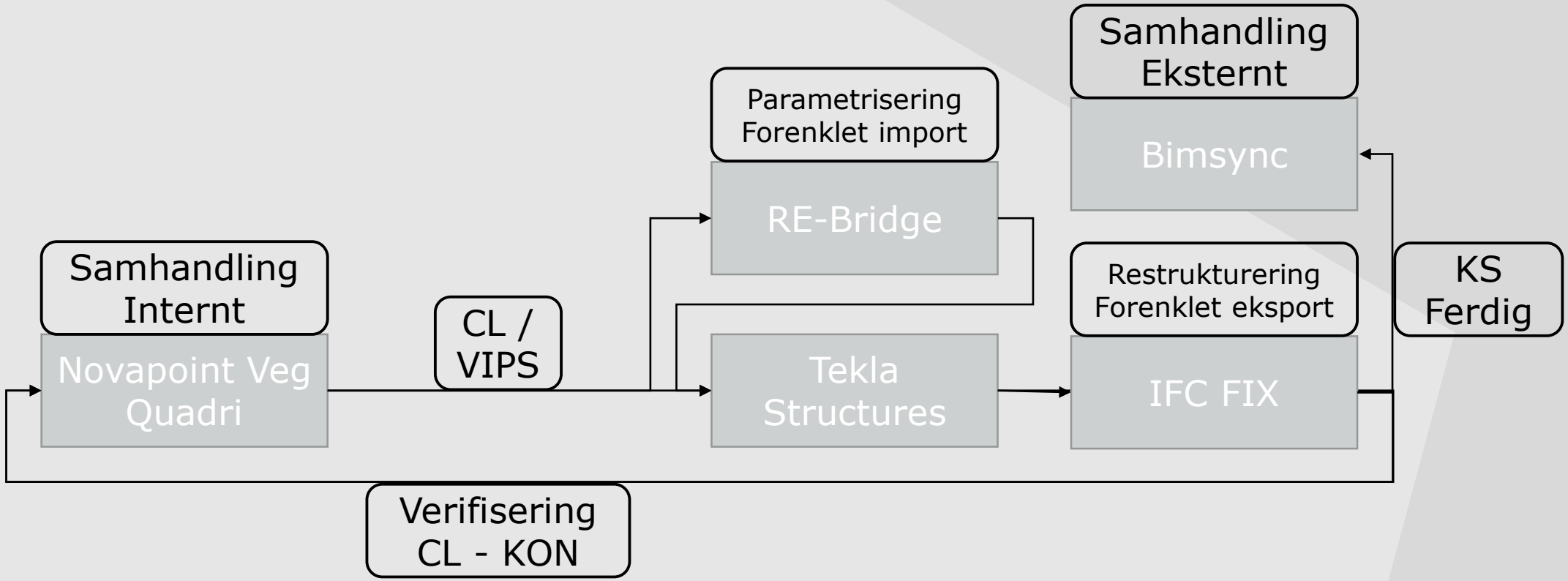
- Tilpasninger
  - Kompetanseheving
  - Standardisering
  - Tankesett

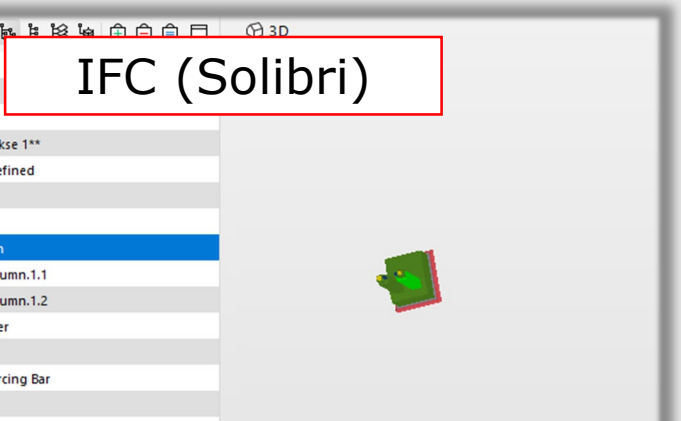
- Samhandling/innsynsplattform
  - Bimsync
  - Brukervennlighet





# Arbeidsmetodikk

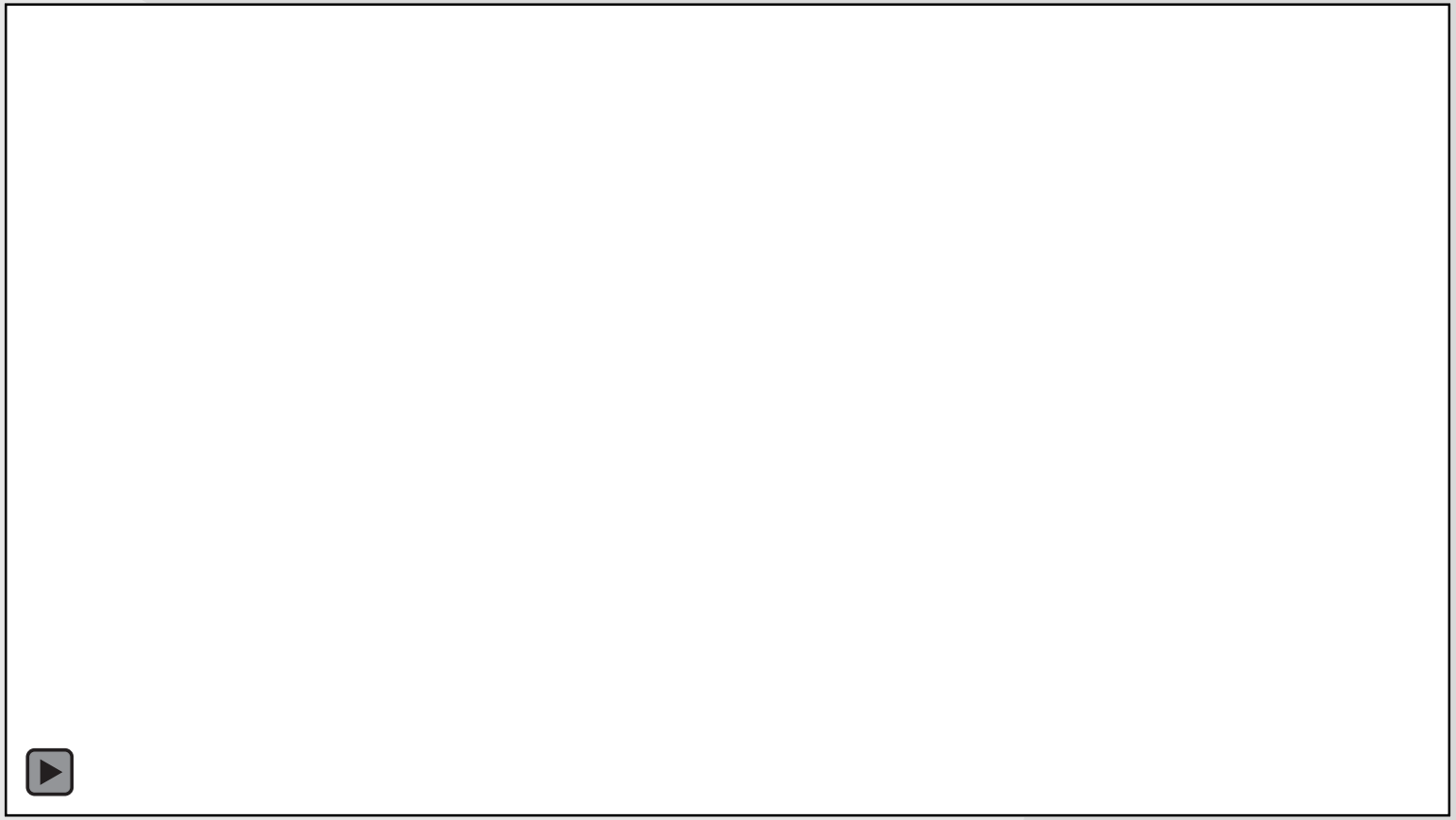


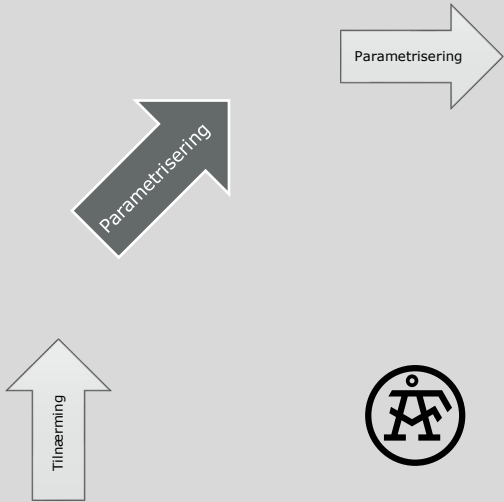




Parametrisering
Metodikk
Tilnærming

# Parametrisering

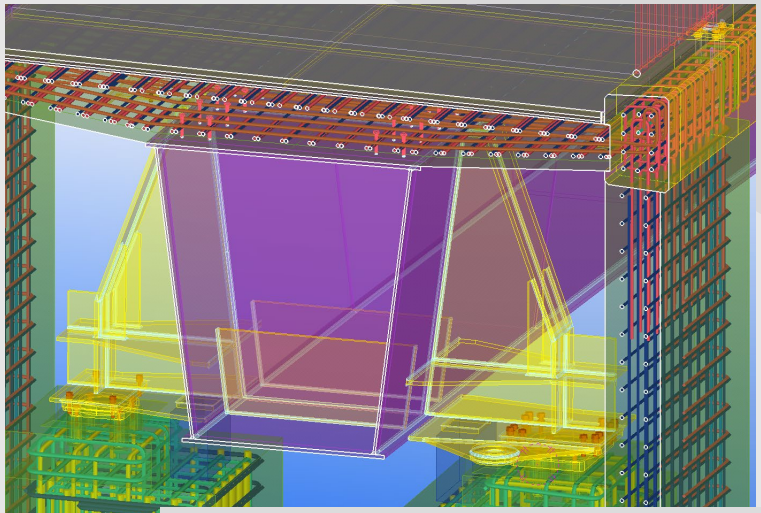
- Hva?
  - Automatisk endringer
- Hvorfor?
  - Minsker merarbeid
  - Tidligere igangsettelse
  - Effektivisering i senere prosjekt
- Hvordan?

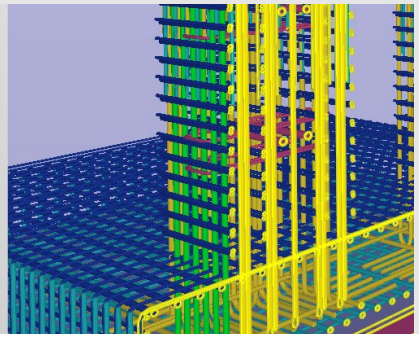




# Detaljnivå

- Definisjon
  - Geometri/metadata
- Premiss
  - Tegninger→modell
  - Krav
- Hvordan?





INFO

(B) Reinforcing Bar.0.18

Identification | Location | Quantities | Material | Relations | Classification | Hyperlinks

AFE_History | AFE_Status | Ifc Dimensions | IMP_ARMERING | IMP_STÅL | Tekla Reinforcement

| Property | Value |
|---|---|
| CAST_UNIT_POS | S1/1 |
| CC_EXACT | 5*124.0 |
| CC_TARGET | 150.0 |
| DIM_A_MAX | 2.90 m |
| DIM_A_MIN | 2.90 m |
| DIM_B_MAX | 555 mm |
| DIM_B_MIN | 555 mm |
| DIM_R | 80 mm |
| LENGTH | 3.38 m |
| LENGTH_MAX | 3.38 m |
| LENGTH_MIN | 3.38 m |
| MATERIAL | B500NC |
| NAME | Rebar |
| REBAR_POS | K01/210 |
| SHAPE | 11 |
| SIZE | 32 |

Tekla® Open API

Detaljnivå

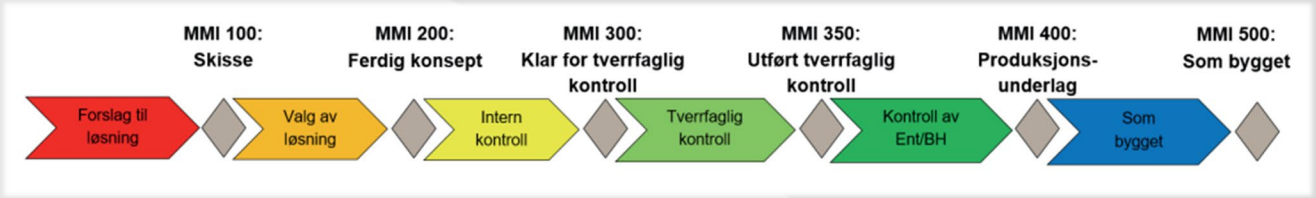
Detaljnivå

Metodikk

*«Det er den brua pr. nå med størst detaljeringsgrad»*

# MMI

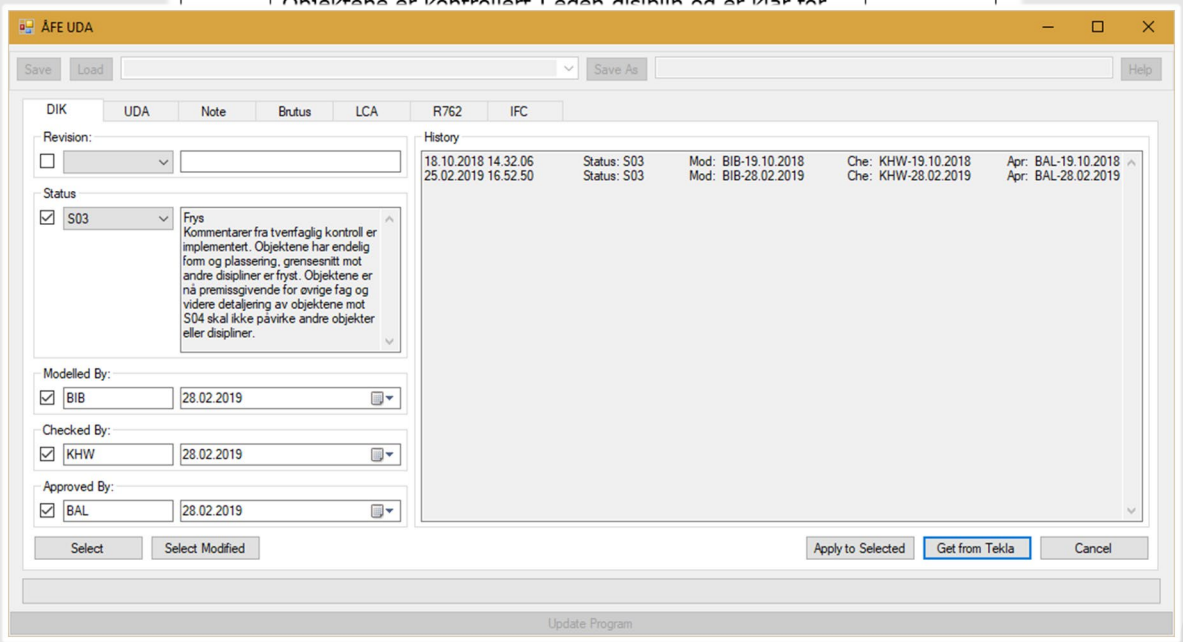
- Modell modenhets indeks

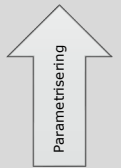



- Hvorfor?
  - Kontroll
  - Sporbarhet
  - Sortering

| Status | Definisjon | Fargekode |
|---|---|---|
| **S01** | **Foreløpig informasjon**<br>Objekter er definert med foreløpig plassering og geometri.<br>Det er sannsynlig for at det tilkommer endringer av objektene. | |
| **S02** | **Klart til tverrfaglig kontroll**<br>Objekter har endeling grunnlagsinformasjon, har riktig plassering og ytre geometriske grenser er definert. | |

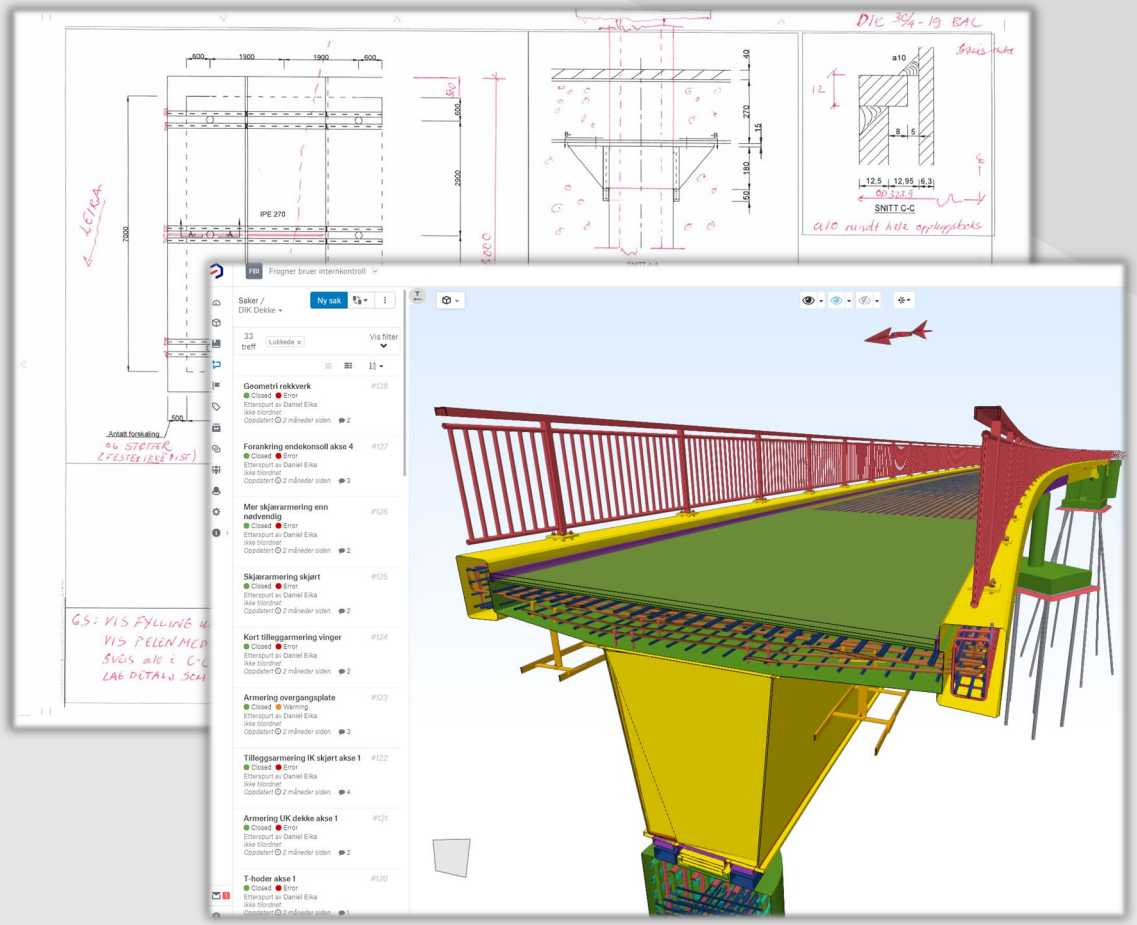
- Hvordan?
  - Forenklet system
  - Mot KS-plan





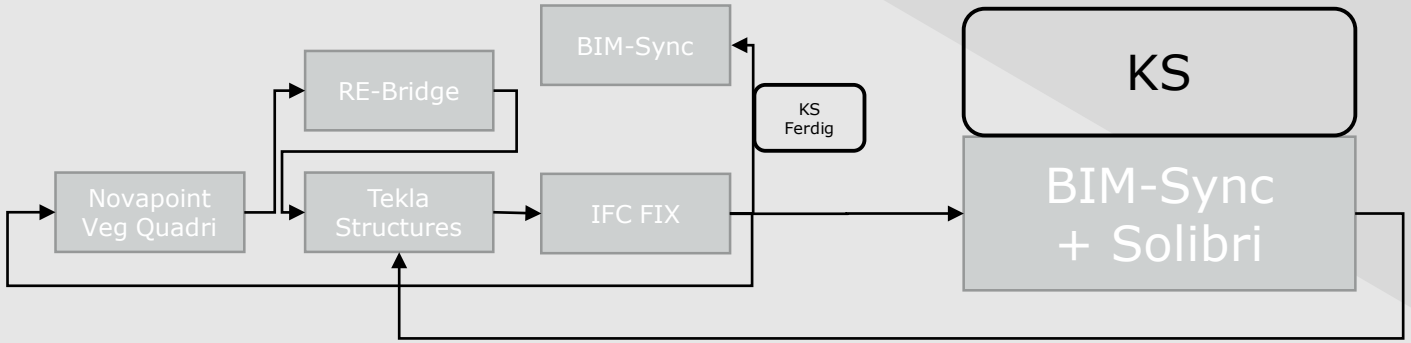
# KS

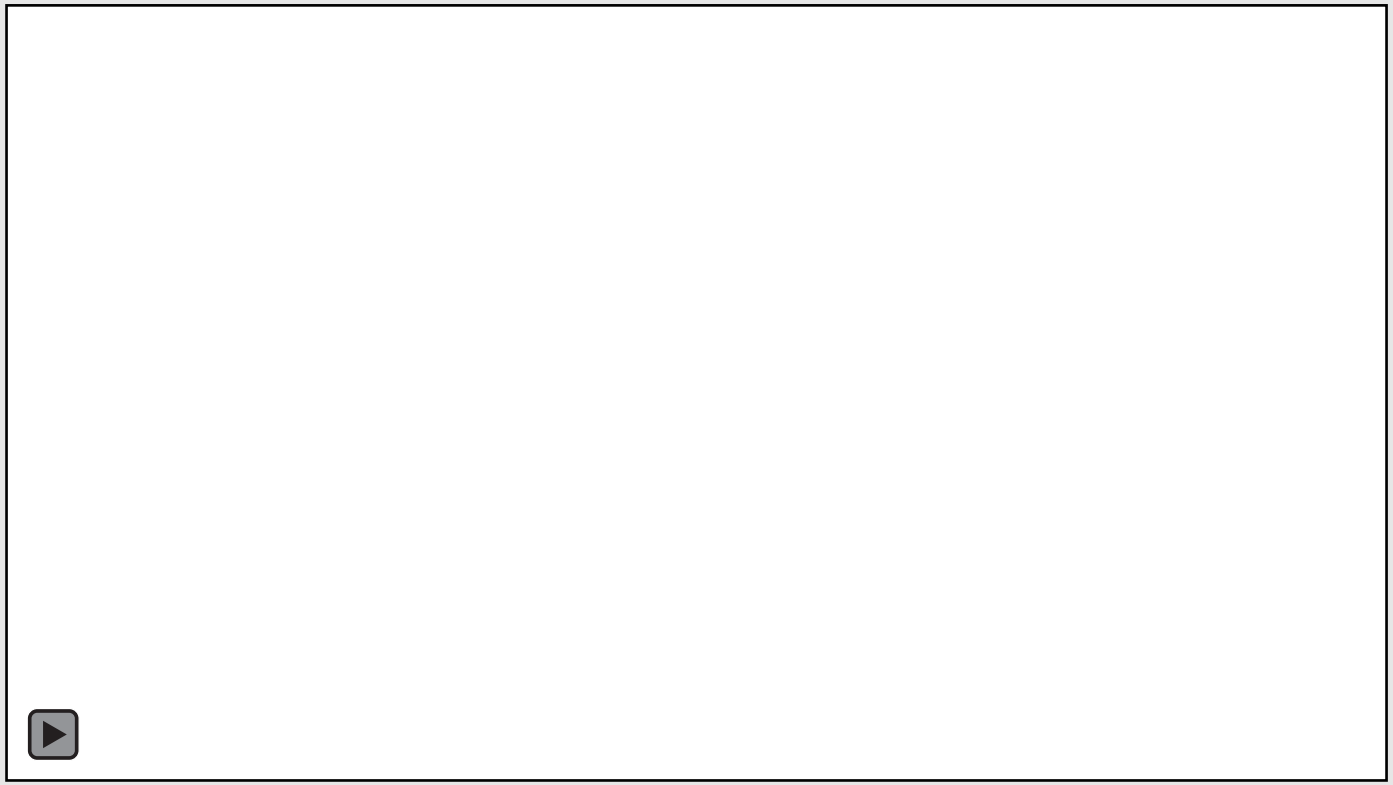
- Tegningsløs kontroll
  - Omstilling
  - Nye rutiner
  - KS-skjema
- Når?
  - Flytskjema
- Hvordan?




| NR. | Navn |
|---|---|
| DIK 1 | Beregninger |
| DIK 2 | Intern geometri (form) og sekvens |
| DIK 3 | Ekstern geometri (form) og sekvens |
| DIK 4 | Armering |
| DIK 5 | Informasjon |
| DIK 6 | Sluttprodukt |

# KS



Produkt

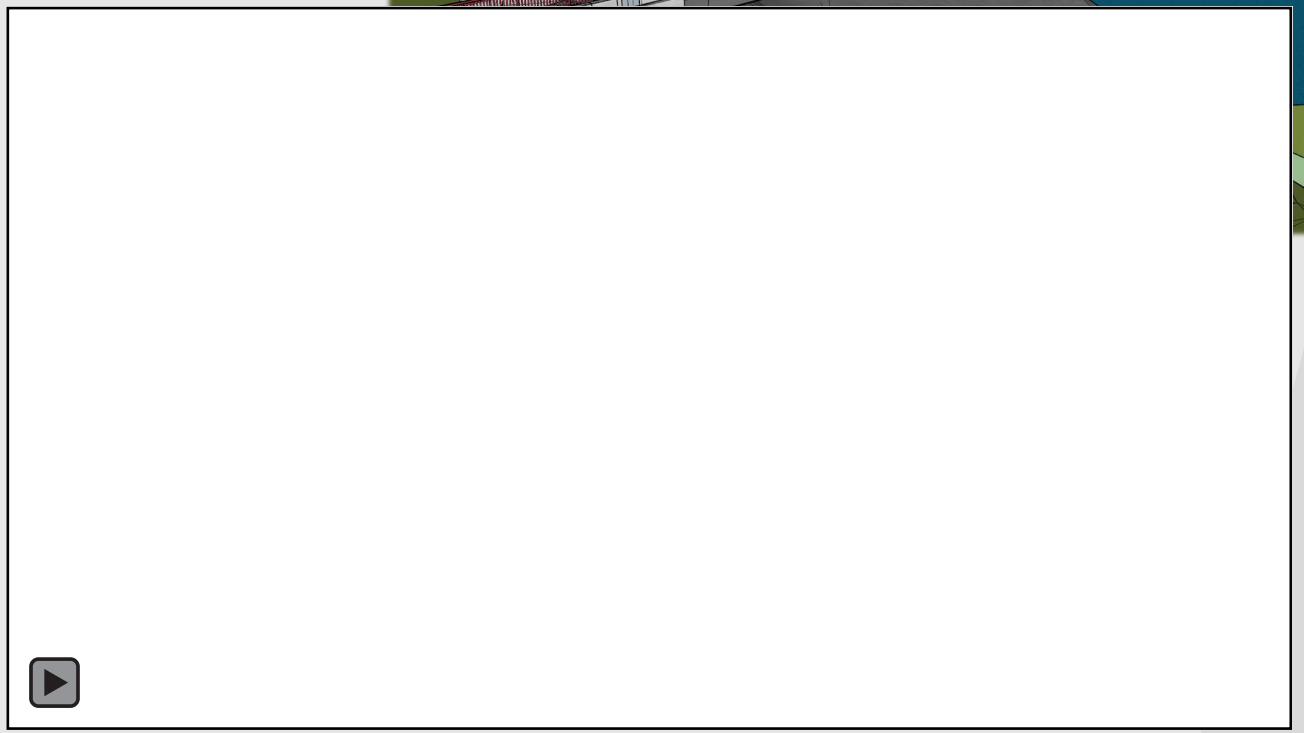
KS

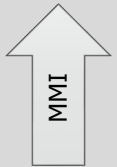
MMI

# Produkt

- Bruksområder
  - En kilde til informasjon
  - Grunnlag for bygging
  - Tilpasset kunde/entreprenør
  - Visuell

- Muligheter
  - Visualisering/VR
  - FDV
  - Underlag





# Making Future.