Soil Things
How to put Domain Models into STA

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The Starting Point

- It’s a Domain Model
- With relations
- Observations 4 All

- How to put this in STA?
How to put Soil Features in STA Thing?
A simpler example

- To reduce diagram complexity
Option 1 – Pure STA

- Model all entities as Thing
  - Give each Thing a properties/type

Advantages
- 100% STA

Disadvantages
- Relations between specialized thing entities are lost
Option 2 – Shadow Things

- Add Entities attached to Things
  - Give each Thing a properties/type

- Advantages
  - 100% STA
  - Relations are fully exposed
    - Full Query/Expand

- Disadvantages
  - All domain entities duplicated
    - → Double maintenance
  - Things in between
    - Room → Thing → Datastream
    - Room → Thing → Location
Option 3 – Thing-less

- Replace Things with Domain Entities

- Advantages
  - Relations are fully exposed
  - Full Query/Expand
  - Perfect for Domain Client

- Disadvantages
  - Not STA
  - Things are missing
Option 4 – Thing Views

- Model all Domain Entities
  - Replace Things with a DB-View merging all entity information

- Advantages
  - 100% STA
  - Relations are fully exposed
  - Full Query/Expand
  - Perfect for Domain Clients

- Disadvantages
  - ...

[Diagram of a building with rooms and windows, labeled with entity types and properties such as ID, name, description, and properties, illustrating the DB-View concept.]
Back to Soil Things

- [https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-SoilThings/v1.1/](https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-SoilThings/v1.1/)
- [https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-SoilThings/ODATA_4.01/$metadata?$format=json](https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-SoilThings/ODATA_4.01/$metadata?$format=json)
Example Queries

- https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-SoilThings/v1.1/SoilPlots?$filter=ObservedProfile/IsDescribedByHorizon/Datastreams/ObservedProperty/name eq 'grensduidelijkheid'

- https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-SoilThings/v1.1/SoilPlots?
  $select=id,name&
  $expand=ObservedProfile(
    $select=id,name;
    $expand=IsDescribedByHorizon;
    $select=id,name
  )

  )
Standard STA Client can read Soil Things

https://api4inspire.k8s.ilt-dmz.iosb.fraunhofer.de/servlet/is/203/
How about *Your* Domain Models?

- **Tooling**
  - Domain Database → Domain+STA Database
  - Database → FROST

- **SoilThings Example:**

- **Observable Properties example:**