Working group Requirements

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1. How to identify requirements?
   - from users?
     but they do not know, what they need!

   - produce as good a product as you can
     and hope for users -> trial and error

   - strive for complete collection
     limited by cost? stamp collection

   - multi-purpose
     but not good for any purpose

   - prepare for decisions or classes of decisions

Alternative:
   list of applications...

2. Why requirements for 3d geometry models

Serious difficulties when integrating diffferent data.
Discussion of practical problems in projects!

Trend to standard software, not purpose-built.
-> what is the "best" 3d data model?

Interlude:

what is the difficulty in interoperability really?
data model?
level of detail?

more research on managing multiple represenations,
producing different level of detail,
dynamic densification,
etc.
required!

connection to geometry model: are there geometric atoms?
likely answer: not for the representation of the physical environment.

3. What are the application that depend on 3d data?

- modelling of continuous phenomena in 3d
  - wind
  - pollution
  - water flow
  - flooding
  - telecommunication

  - visibility

Need continuous surface (closed, no holes)
  - what is included
    - level of detail
    - buildings, trees, ...

Partial Differential Equations

- navigation
    - driving car, following prescribed lanes
        3d for complex intersections
        visual representation or schematic
            what is better?

    - pedestrian
        visual representation of environment
        can compensate of limits of position data

        issue: regular update, shop names function as landmarks

        inside building?

        navigable surface outside of buildings (the hinterland)

- planning
    check new buildings and how they combine with current situation

practical solution:
    surveying department produces 'general purpose' data set
    anything else is users requirements.

Summary:

consistency rules for models are crucial for interoperability

but level of detail inferences as well

block model for modelling continuous phenomena

several application

question of what is included (buildings, trees)

resolution, precision

building models

cityGML level of detail is a good approach

city navigation for pedestrian requires landmark detail

geometry of particular structures

shop signs and other often changing visually salient

outside of cities:

land cover - regular changing visual apparence

crucial: integration with 3d models used for civil engineering. IFC standard!