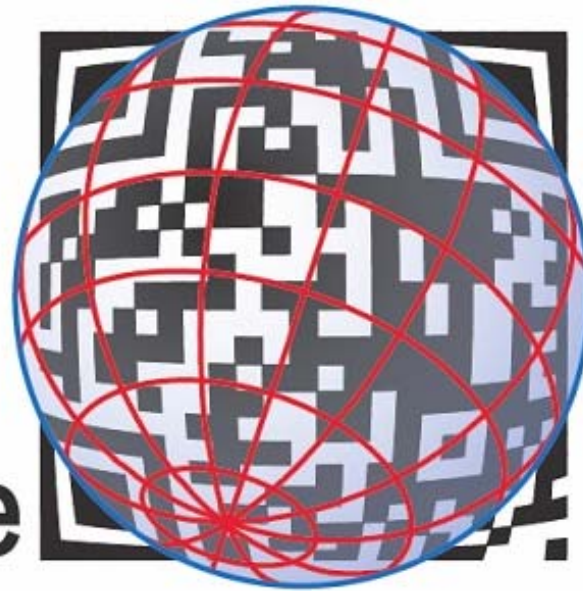




maps<sup>4</sup>  
science



## Proposal large-scale research facility (GOF) Geoweb: nerve system sustainable environment

Peter van Oosterom,  
TU Delft, OTB Research Institute for the Built Environment, GIS technologie

Maps4Science consortium meeting, Monday 24 oct'11, 14:00-16:30 hours  
(zaal 2.60, TU Delft Library, Prometheusplein 1, Delft)

# Maps4Science Motivation

- NL → one of the worlds' best-measured countries  
Great data sets: topo base map, AHN-2, geology, socio-economic,...
- However, geo-data use within academia is poor, reasons:
  1. Licence restrictions
  2. Technical inability to handle data types (3D, massive data,...)
  3. Lack of awareness
- Maps4Science goals:
  1. Production tool
  2. Research topic itself

# Concept agenda

1. Welcome
2. **Introduction round**
3. Presentations current status local intro's 'geo-loketten':
  - UU geo-loket (Maarten Zeylmans)
  - Special map collections WUR library (Liesbeth Missel)
  - GeoDesk (Alterra door Jandirk Bullens)
  - Geo data warehouse UT/ITC (Rolf de By)
  - TUD kaartenkamer/ TUD Maps (Paul Suijker)
  - VU Geoplaza (Peter Vos, Ronnie Lassche)
4. Presentation generic ICT GOF 'eInfrastructure' (René van Schaik, Netherlands eScience Center) + discussion GOF-GOF connection
5. Discuss response to comments of NWO experts, deadline 26 oct'11
6. Next steps → Interview 9-12 jan'12 (if selected)
7. Closing

# Present today

- Jacqueline Meerkerk (IIP-Geo)
- Camille van der Harten (GeoBusiness Nederland)
- Tamme van der Wal (Aerovision)
- Rolf de By (ITC)
- René van Schaik (Netherlands eScience Center)
- Rob van Swol (NLR)
- Jandirk Bulens (Alterra)
- Liesbeth Missel (WUR)
- Peter Vos, Ronnie Lassche (VU)
- Maarten Zeylmans (UU)
- Tom van Engers (UvA)
- René van Horik (DANS)
- Willemijn Simon van Leeuwen (GeoFort)
- Jeroen Rombouts (3TU.Datacentrum)
- Paul Suijker, Frits van Latum, Peter van Oosterom (TUD)

# Large-Scale Research Facilities

- Tool for science & Tool of science
  - Tool/facility focus & direction providing to organisation of science
- “ ... part of the science process and materializing science results”;
- Main characteristics:
  1. Large (investments too large for individual participants);
  2. Potentially high learning effects, network effects, cluster effects;
  3. Own research group, and staff to keep facility up-to-date;
  4. National and international orientation; based on collaboration;
  5. Unique, there is only 1;
  6. Open for, and attractive to researchers from outside (incl. companies and international).

# Characteristics call



## Conditions:

- Proposal 31 aug'11, 23:59
- Use IRIS
- Budget at least € 10M
- Submission letter, partner letters, support letters and complete form (the proposal) in English, max. 40 pages.

## Specs for Maps4Science:

- Opname in roadmap and financing
- Spatial Cyber Infrastructure
- **3 building blocks: Infrastructure Block, Research Block, Living Lab**

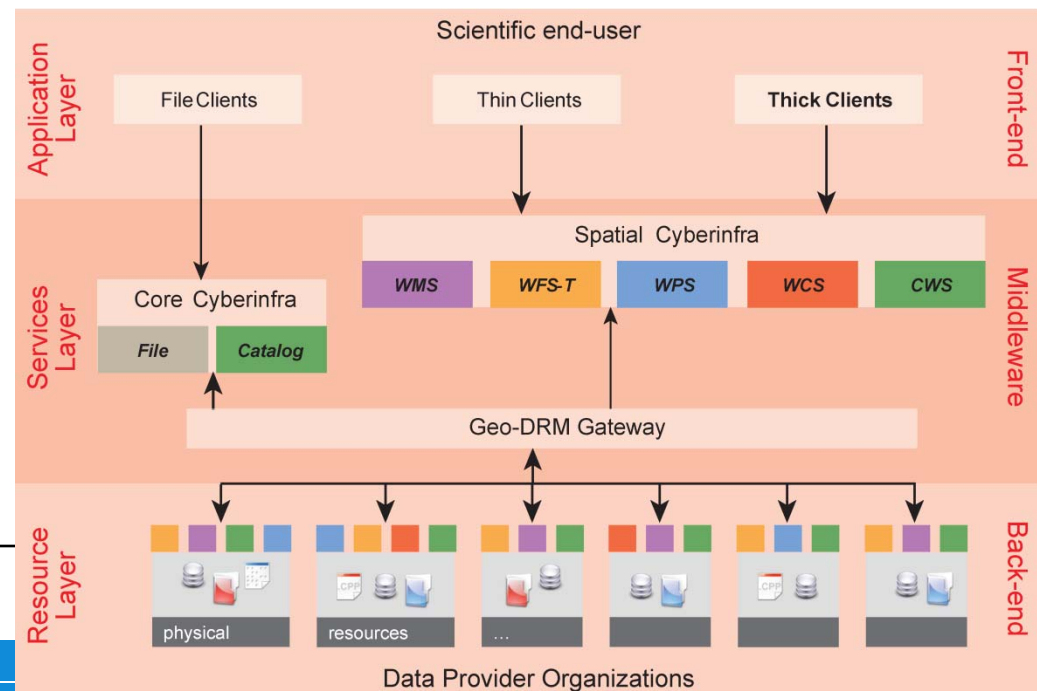
→ Not 'yet another GII'

# 4 science cases

1. Geo-Information Science case: 9 GI research topic
2. Science with geo-information case: 6 domains
3. Spatial Cyberinfrastructure science case
4. Digital rights management science case

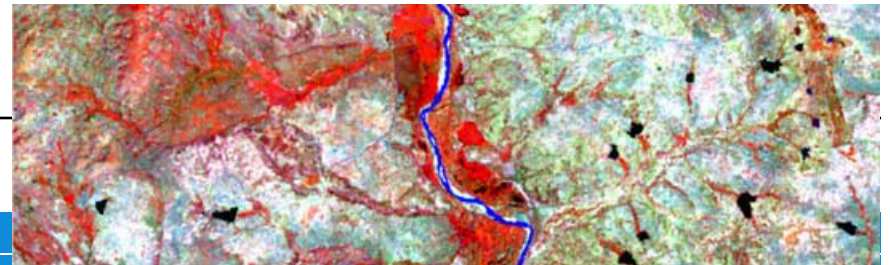
→ 'Overlap' (equal) item 3 with building block Infrastructure

→ 'Overlap' item 4 with GI research 8 (GII assessment)



# Scientific breakthroughs (1): science cases using geo-data

- Health: Measuring and Forecasting the Spread of Epidemics  
Prof. dr. Peter Sloot (UvA)
- Water resources: Better management through geo-information  
Prof. dr. ir. Nick van der Giesen (TUD)
- Crime: Geo-information and GI-Science as Crime reduction tools  
Prof. dr. Marianne Junger (UT)
- Agriculture: Avian Influenza - Don't spread the disease  
Ir. Henk Janssen, WUR;
- Cultural history: The Integrating Heritage Program  
Prof. dr. Jan Kolen, Prof. dr. Henk Scholten (VU)
- GNSS performance: Support mission-critical applications by predicting GNSS performance  
Drs. Judith van Bruggen-van Putten (NLR)





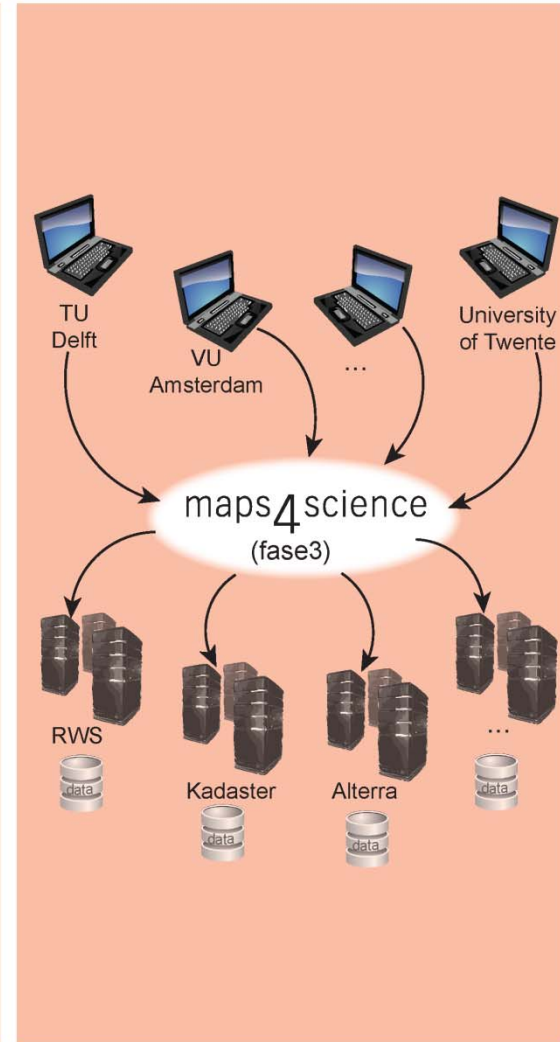
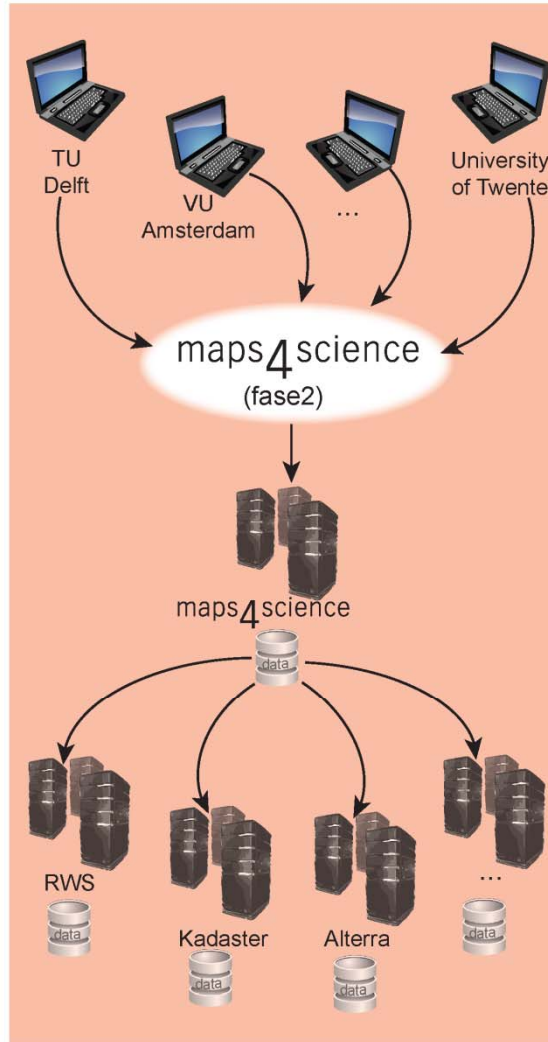
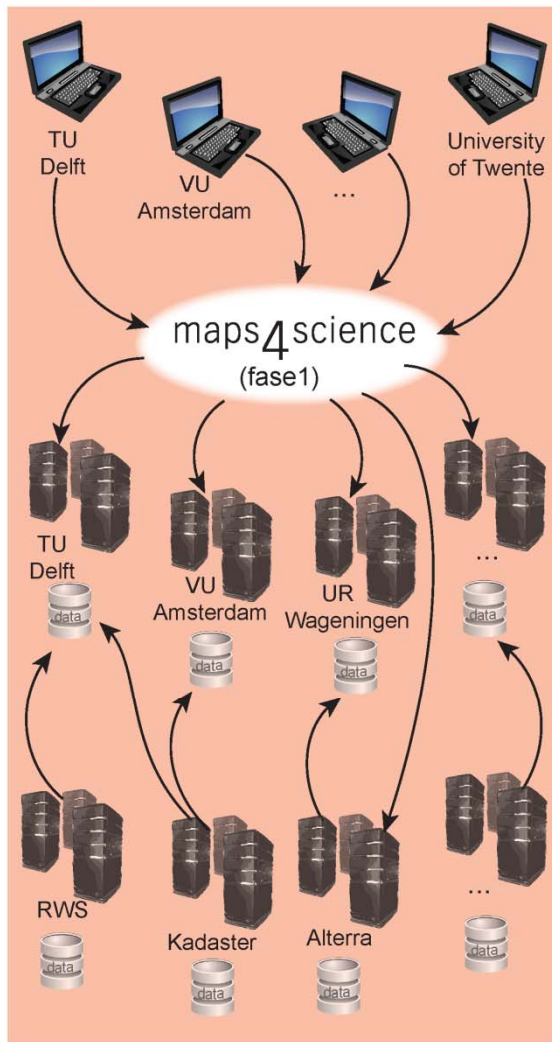
# Scientific breakthroughs (2): GI-science itself

- Create best GII (geoweb)
  1. Architecture, resources and standards;
  2. Usability and dissemination modes;
  3. Management of very large data sets;
  4. Semantics of GI;
  5. Services, searches and optimization;
  6. Standardized data models and data quality;
  7. Volunteered GI and citizen science;
  8. GII-assessment;
  9. Satellites as a service.

TU Delft Maps

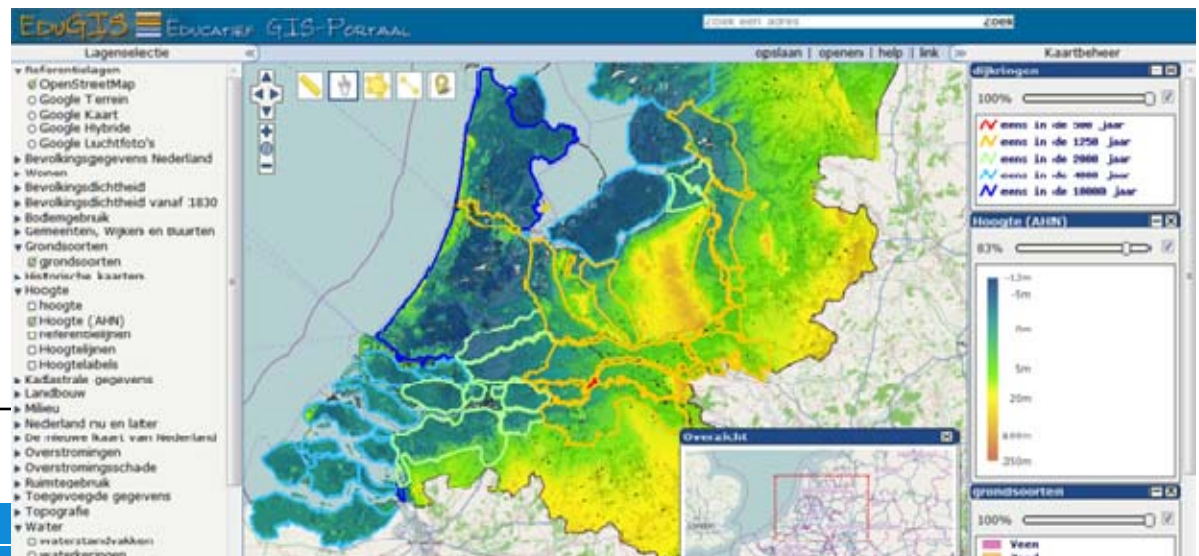


# Instead of local facilities towards a national facility, phases



# Partners

1. Technische Universiteit Delft, Prof. dr. ir. Peter van Oosterom
2. Alterra, Ir. Jandirk Bulens
3. Data Archiving and Networked Services (DANS), Dr. Peter Doorn
4. Geonovum, Drs. Rob van de Velde
5. NLR, Dr. Rob van Swol
6. Universiteit van Amsterdam, Prof. dr. Tom van Engers
7. Universiteit Twente, ITC, Dr. ir. Rolf de By
8. Universiteit Utrecht, Prof. dr. Steven de Jong
9. Vrije Universiteit Amsterdam/**EduGIS**, Prof. dr. Joop v/d Schee
10. Wageningen Universiteit, Prof. dr. ir. Arnold Bregt



# Supporters national (1 / 2)

- SURF, Prof. dr. W.B.G. Liebrand
- Netherlands eScience Centre, Prof. dr. Jacob de Vlieg
- Kadaster, Dr. ir. M.A. Salzmann
- TNO | Geological Survey of the Netherlands, Dr. M.J. v/d Meulen
- KNMI, Royal Netherlands Meteorological Institute, Dr. G.H.J. v Oord
- RWS-DID, Rijkswaterstaat, Data-ICT-Dienst, Ir. Arie Versluis, MBA
- AHN Programme, Ir. R. van der Velden
- Het Waterschapshuis, Drs. J.W.A. van Enst
- The Hydrographic Office (Def), Kortenoeven, Kapitein ter Zee
- PBL - Netherlands Environmental Assessment Agency, Ir. R. v/d Berg
- Netherlands Space Office, Dr. G. Nieuwpoort

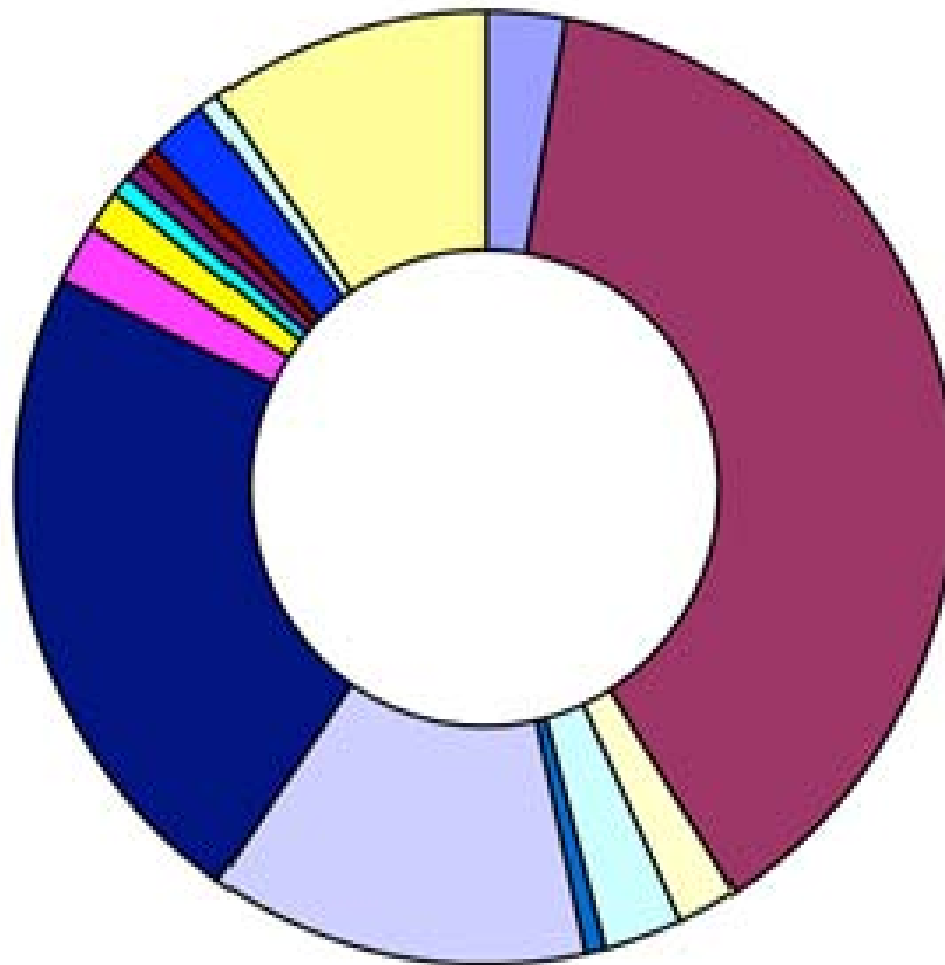
# Supporters national (2/2)

- Geo Business Nederland, Drs. E.H.T.M. Nijpels
- Geomatica Business Park, Prof. ir. J. Stuip
- Noldus Information Technology, Dr. L.P.J.J. Noldus
- KNAW-NCG, Netherlands Geodetic Commission, Prof. dr. ir. M. Molenaar
- GeoFort, Drs. Willemijn Simon van Leeuwen
- Next Generation Infrastructures, Prof. dr. ir. M.P.C. Weijnen
- Stichting Arbeidsmarkt Geo, H. Westerbeek, MSc
- ICT Innovation Platform for Geo-information, Ir. Th. Thewessen
- Ministry of Infrastructure and the Environment (I&M), Drs. F. Lips
- Ministry of Economic Affairs, Agriculture and Innovation (ELI), Dirk van Barneveld

# Supporters international

- OGC, Open Geospatial Consortium, Mark E. Reichardt
- Geoide Network, Canada, Prof. dr. Nicholas Chrisman
- CRC-SI, Cooperative Research Centre for Spatial Information, Australia, Dr. Peter Woodgate
- KU Leuven, Instituut voor de overheid, Dr. Joep Crompvoets
- ISO/TC 211 Geographic information/Geomatics, Olaf Østensen
- EuroSDR, Jean-Philippe Lagrange
- EDINA, UK National Data Centre (Uni Edinburgh), Peter Burnhill
- GSDI, Global Spatial Data Infrastructure Ass, Dr. Abbas Rajabifard
- AGILE, Danny Vandenbroucke, MSc
- EuroGeographics, Dave Lovell, OBE FRGS CGeog

## User Disciplines



- Agriculture, food, and forestry
- Architecture and planning
- Biological sciences
- Business and management studies
- Communication and media studies
- Creative and performing arts
- Education and research methods
- Engineering
- Geography and environment
- Humanities
- Law
- Mathematics and computer science
- Medicine including dentistry
- Modern languages and area studies
- Nursing, midwifery and allied health
- Physical sciences
- Psychology
- Social sciences
- Veterinary medicine
- Other

source: <http://edina.ac.uk/impact> (geology digimap)

# “Doctor, take your own medicine...”

- (nearly) all scientists need geo-information, not only the geo-related disciplines (but also archaeology, epidemiology, engineering, social sciences, etc.) → data intensive science
- Proposal for large national research facility: Maps4Science (2+5 years project, 22.8 meuro, mostly Univ's partner)
- Dutch geo-data provides support
- Node in international network; e.g. EDINA
- Make the best GII: 3D, scale, semantics, upload, large data, remote processing, data policy  
→ [www.maps4science.nl](http://www.maps4science.nl)





# Summary: Geoweb/SII also in research → breakthroughs

- Collect once (continuous), multiple use
- Use stimulate quality (feedback)
- Many agreements (standards, formal semantics)
- Information flows between autonomous organisations
- information-infrastructure: support existing applications, butt also enable new applications
- No other GOF benefits such a large amount of researchers

# Concept agenda

1. Welcome
2. Introduction round
3. Presentations current status local intro's 'geo-loketten':
  - UU geo-loket (Maarten Zeylmans)
  - Special map collections WUR library (Liesbeth Missel)
  - GeoDesk (Alterra door Jandirk Bullens)
  - Geo data warehouse UT/ITC (Rolf de By)
  - TUD kaartenkamer/ TUD Maps (Paul Suijker)
  - VU Geoplaza (Peter Vos, Ronnie Lassche)
4. Presentation generic ICT GOF 'eInfrastructure' (René van Schaik, Netherlands eScience Center) + discussion GOF-GOF connection
5. **Discuss response to comments of NWO experts, deadline 26 oct'11**
6. Next steps → Interview 9-12 jan'12 (if selected)
7. Closing

	REVIEWER 1	REVIEWER 2	REVIEWER 3	REVIEWER 4	GEMIDDELD
<b>1. SCIENCE CASE</b>	<i>excellent</i>	too much traditional SDI <i>very good</i>	uniform API <i>very good</i>	why is the facility the best way to solve the science case. <i>very good to excellent</i>	<i>4,375</i>
<b>2. TALENT CASE</b>	<i>excellent</i>	not enough detail <i>very good</i>	<i>excellent</i>	<i>excellent</i>	<i>4,75</i>
<b>3. INNOVATION CASE</b>	<i>excellent</i>	structure of section unclear <i>very good</i>	virtual immersion facility?? <i>very good</i>	<i>very good to excellent</i>	<i>4,375</i>
<b>4. PARTNERSHIP CASE</b>	<i>excellent</i>	<i>excellent</i>	Gates foundation and USAID support letters missing <i>good</i>	<i>good</i>	<i>4</i>
<b>5. BUSINESS CASE</b>	explain costs; why costs beyond personnel costs; <i>good</i>	well balanced, maybe too high on infra <i>excellent</i>	<i>very good</i>	not cost efficient; more decentralised would save money. <i>good</i>	<i>3,75</i>
<b>6. TECHNICAL CASE</b>	drowning by data <i>very good</i>	more on linked data <i>very good</i>	<i>excellent</i>	handling large data set must be incorporated in consortium <i>very good</i>	<i>4,25</i>
<b>7. NL FOCUS</b>	<i>excellent</i>	<i>excellent</i>	<i>very good</i>	<i>very good</i>	<i>4,5</i>
<b>8. CRITICAL MASS</b>	<i>excellent</i>	<i>excellent</i>	lack of intern. Support letters. <i>good</i>	<i>very good</i>	<i>4,25</i>
<b>9. EMBEDDING</b>	describe network better <i>excellent</i>	<i>very good</i>	<i>good</i>	<i>very good</i>	<i>4</i>
<b>10. WILLINGNESS TO COLLABORATE</b>	<i>excellent</i>	<i>excellent</i>	concrete commitments are lacking <i>fair</i>	proof for collaboration is not in the proposal. <i>good</i>	<i>3,75</i>
<b>11. SOCIAL TRENDS</b>	<i>excellent</i>	<i>excellent</i>	<i>excellent</i>	<i>excellent</i>	<i>5</i>
<b>OVERALL</b>	<i>excellent</i>	too much classical SDI <i>very good</i>	explicit information regarding resources for collaboration <i>very good</i>	proposal must be more focussed, not all can be achieved. <i>very good to excellent</i>	<i>4,375</i>

# Comments NWO experts, items

- Business case needs clarifying
- Better explain National/International Advisory panels and Boards
- Make clear that we are able to handle huge amounts of data; sceptics towards academic facilities, compared to Google, Amazon,...
- The term science case
- Linked data as main/only paradigm (semantics) and not 'classic' SDI
- Make challenges for the (6) domains more clear
- VR theatre → (too) expensive (did we mention this?? Perhaps AR)
- International links: Gates foundation, USAID,....
- Willingness to collaborate is weak section, own contribution
- Some technical details remain vague (eg. VGI/sensor integration)
- Very broad proposal, more focus needed?