Modern Hydrology
Remote sensing in operational water management

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This talk

- Watermanagement in The Netherlands
- Modern hydrology – a discipline in motion
- Challenges in modern hydrology
- Examples of solutions for end users
- Developments…for inspiration!
The Netherlands
Water management in The Netherlands

- From watermanagement to information management

25 waterboards
Take care for
- Dry feet
- Availability of water
Dutch weather

- never a dull moment
Hydrology

- Hydrology: foundation for many studies

![Diagram showing the water cycle, including Rain and ET (Evapotranspiration).]
Modern Hydrology

- More (spatial) data
- Faster computers -> models
More data – remote sensing

- Surface elevation
- Land use
- Rainfall
- Evaporation
- Soil characteristics…
- etc..

100 x 100 m
10 x 10 m
1 x 1 m
Detailed computations
Challenges in modern hydrology

Science is progressing fast….but is end user connected?

=> From watermanagers to information managers

■ Who’s the end user?
■ What information is needed?
■ What’s the best model?
■ Which data is needed?
Role of DHV

- Customer is our focus point
  - Governmental organizations
  - Drinking water companies
  - Agricultural organisations
- Practical solutions with the best knowledge available
- Bridging the gap between science and practice

Customer; ‘problem’
Or challenge…
Efficient watermanagement

Advisor:
‘best’ solution

New model techniques
New data sources
What we need

- A coherent framework
  - Central data base store
  - Clear distinction between source data and model schematizations

- Open source applications
  - Free and open data policy of Dutch government
  - Our vision: sharing is knowledge building

- Transparency. Create public support by showing
  - what you do
  - why you do so
  - how you it

  - Learn from results and feedback from users
Framework; connection

www.lizard.net
Example - RainApp
RainApp – high resolution
RainApp – translated to areas
RainApp – time series and statistics

PhD result:

- Return period, depends on
  - Area
  - Time step
Developments....

- For inspiration
Development – data quality

Crossing Borders

Mobile telephone links as rainfall radar
Development Faster models

- 3Di – [http://www.3di.nu/](http://www.3di.nu/)
- High level of detail
- Impact of changes (scenario’s) is shown instantaneously
- 3D visualisation
Thanks for your attention!

Movie of Amsterdam flooding
3Di Amsterdam