

kadaster



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8 February 2024

A detailed topographic map of a coastal region, likely in the Netherlands. The map shows a complex network of roads, waterways, and land parcels. Key features include the 'Noord Hellegat' waterway, 'Noorder Voorhaven' harbor, and 'Zuiver Voorhaven' harbor. Landmarks such as 'Knooppunt Hellegatsplein', 'Volkeraksluizen', and 'Willemsdam' are labeled. The map also shows various buildings, parks, and infrastructure like wind turbines and bridges. The text 'EuroSDR Workshop Sustainable Business Models' is overlaid on the map in a large, bold, black font with a white outline.

# EuroSDR Workshop Sustainable Business Models



# Key Register Topography

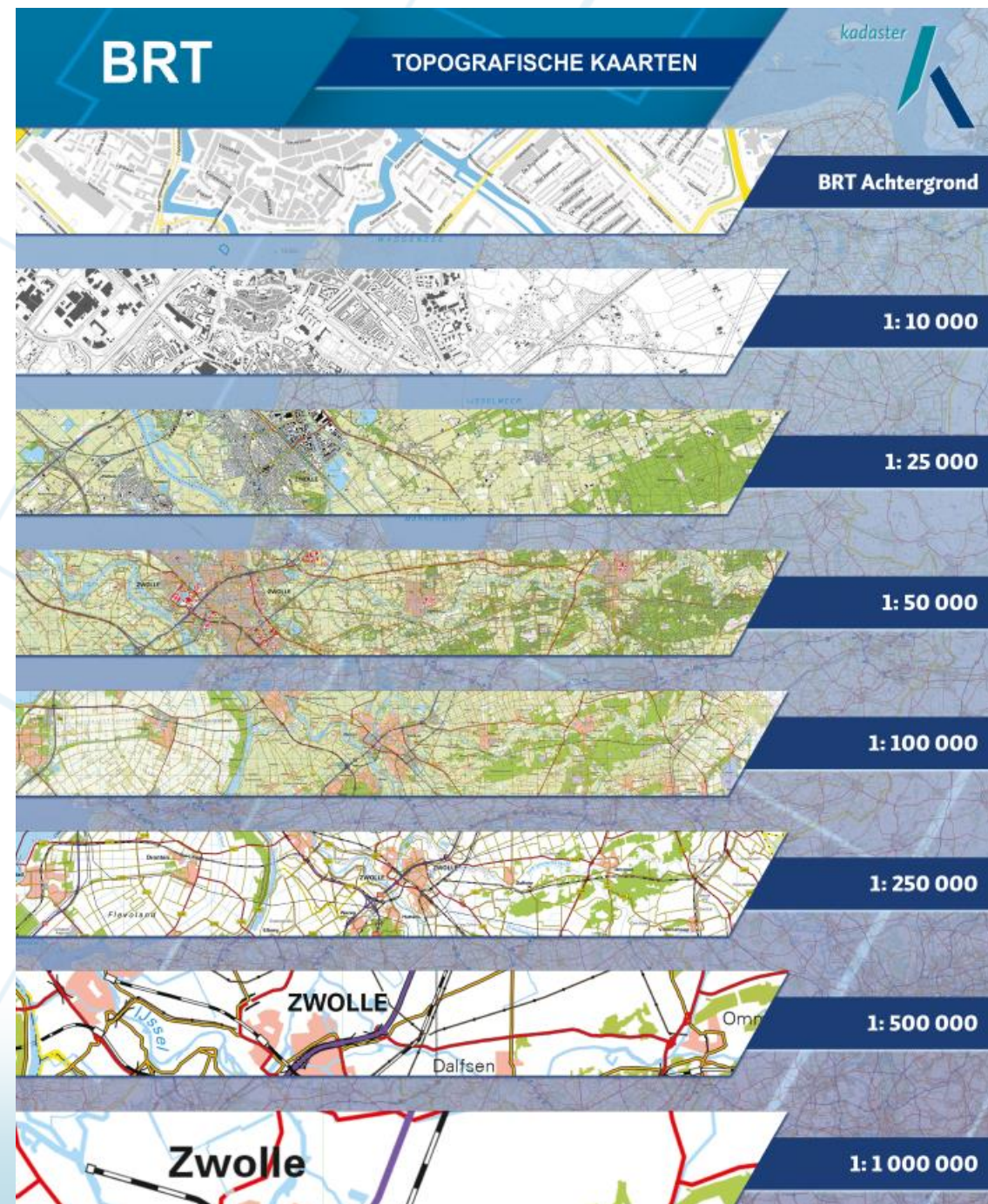
## Basisregistratie Topografie (BRT)

Topographic maps give a complete image of the terrain and landscape, with houses, streets, water, woodland and annotation.

Data

Maps

Webservices





# Challenges

1. Open data since 2012, fixed budget
  2. Up to date, legal obligation 2 years
  3. Increasing demand of customers for:
    - new products, services and downloads
    - better content
  4. Without any compensation for higher cost / inflation
- Do more and better business with the same budget.**



# Opportunities to do more and better business with the same budget.

1. Aerial images and panarama photos  
No field visits needed anymore
2. Fully automatic generalisation, no manual improvements
3. Lean management
4. Customer orientation, user community
5. New products
6. BRT.Next





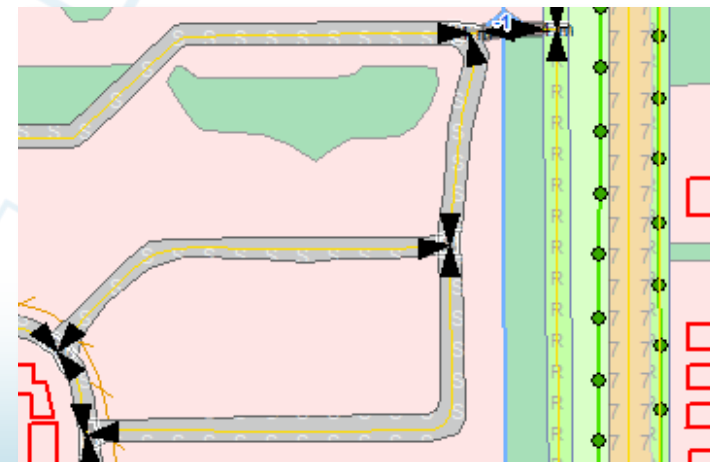
# BRT production, aerial and panorama photos



Aerial images en panorama photo's



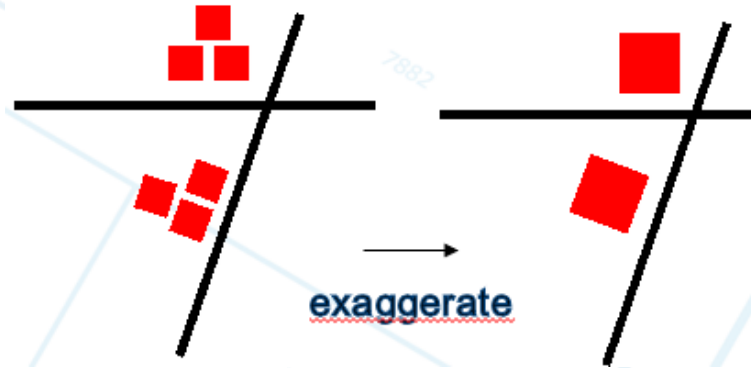
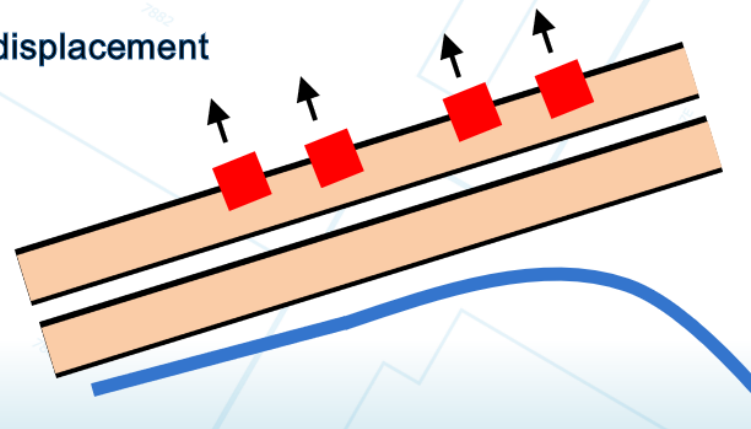
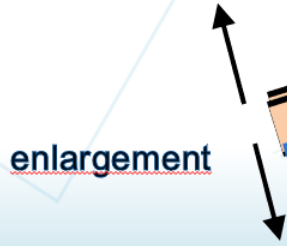
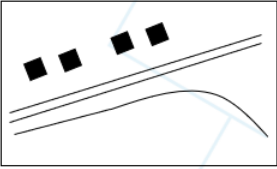
Scan for differences (manually)



Update TOP10NL



# BRT production: Automatic generalisation





# BRT production

## Automatic generalisation

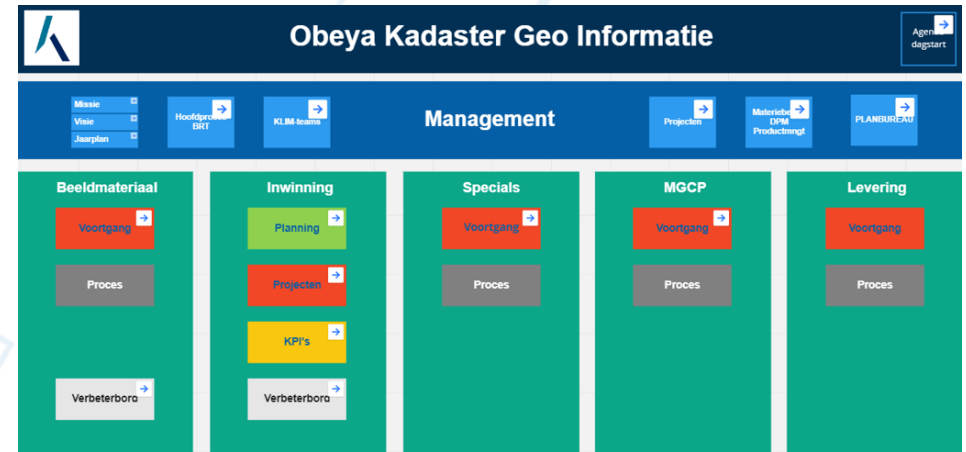






# Lean Management

1. Visual management, digital Obeya
2. Value stream, value for the customer
3. No waste: reduce waiting time, no overproduction, reduce non-value adding activities, delete unnecessary quality control, no defects, no stock/inventory, reduce work in progress
4. Just in Time, First time right
5. Flow and Kanban, from push to pull
6. Plan Do Check Act, continuous improvement
7. Chess pattern for mapsheets
8. Takt time, lead time, cycle time



Texel-z				Afsluitdijk	10Bz	10Ez	10Fz	11Az	11Bz	11Ez	11Fz	12C
09Dz					10Dz	10Gz	10Hz	11Cz	11Dz	11Gz	11Hz	12G
14Bn	14En	14Fn			15Bn	15En	15Fn	16An	16Bn	16En	16Fn	17A
14Az	14Bz	14Ez	14Fz		15Bz	15Ez	15Fz	16Az	16Bz	16Ez	16Fz	17E
4Cn	14Dn	14Gn	14Hn	15C		15Hn	16Cn	16Dn	16Gn	16Hn	17C	
4Cz	14Dz	14Gz	14Hz			15Hz	16Cz	16Dz	16Gz	16Hz	17G	
19An	19Bn	19En	19Fn	20An	Hout	20Fn	21An	21Bn	21En	21Fn	22A	
19Az	19Bz	19Ez	19Fz	20Az	ribdij	20Fz	21Az	21Bz	21Ez	21Fz	22E	
9Cn	19Dn	19Gn	19Hn		k	20Gn	20Hn	21Cn	21Dn	21Gn	21Hn	22C
z	19Dz	19Gz	19Hz			20Dz	20Gz	20Hz	21Cz	21Dz	21Gz	21Hz
25An	25Bn	25En	25Fn	26A		26Bn	26En	26Fn	27An	27Bn	27En	27Fn
25Az	25Bz	25Ez	25Fz			26Bz	26Ez	26Fz	27Az	27Bz	27Ez	27Fz





# Customers / users priorities

1. Maps up to date 2. Maps up to date 3. Maps up to date

User community 4 times per year:

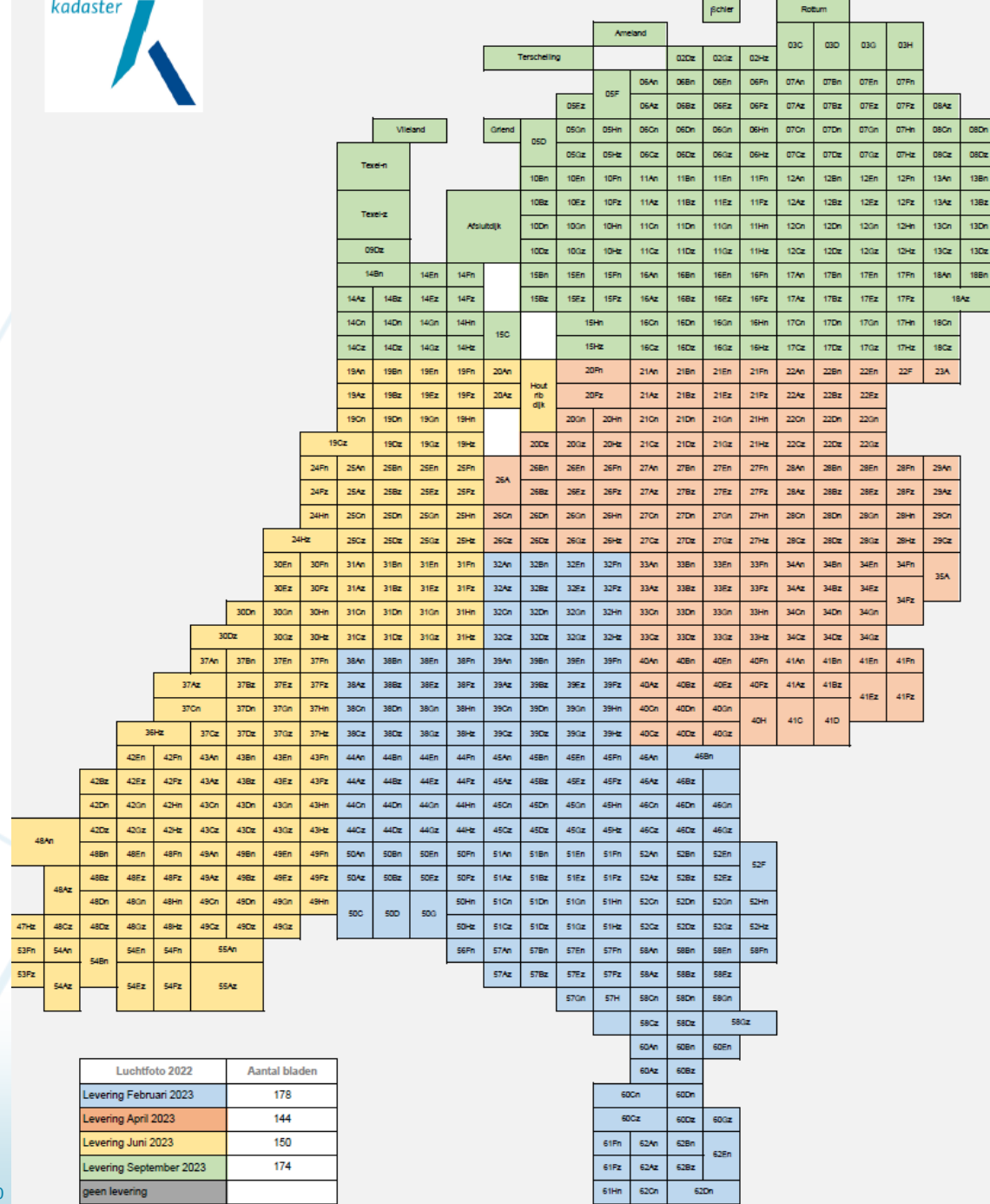
- wishes and demands, complaints
- developments
- share user experiences



# BRT updates 2023

7882

Luchtfoto 2022	Aantal bladen
Levering Februari 2023	178
Levering April 2023	144
Levering Juni 2023	150
Levering September 2023	174
geen levering	



Luchtfoto 2022	Aantal bladen
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geen levering	

Deze planning is indicatief, er kan door het Kadaster van worden afgeweken.

# New products

1. **Topotijdreis.nl : Topo time travel, in 2015  
200 years of map production within Dutch government.**
2. **Scalable Background map for webservices (Google Maps without ads, no track and trace), and NLMaps.nl**
3. **New map scales: 1:500K and 1:1.000K**
4. **New data products (Geopackage)**





## Results so far

Happy Customers 😄 !

Motivated employees

From 4 year update cycle to the whole country in 1 year

80 % reduction in production capacity for 1 update cycle

Lead time -/- 50 %, Work in Progress -/- 50 %

Steady production of 3 map sheets per day

National Lean award: study trip to Japan





# The future is BRT.Next

1. Use of available data from other Key Registers, and from other data sources
2. Single data capture, multiple use
3. New software, new technologies: open source software, Cloud, Geo AI
4. Future proof: physical and functional objects
5. Automatic generalisation 1:1.000 => 1:10.000

New products, new production process, new datamodel.

Different content and quality.



**Thank You**  
**Questions ?**





# Dutch system of Key Registers (NSDI)

A modern and dynamic government that:

- ✓ Single data capture, multiple use
- ✓ Obligatory use by the government
- ✓ Does not ask twice (relief of administrative burden)
- ✓ Is demand driven and pro-active
- ✓ Is not fooled around with (fraud fighting)
- ✓ Is well informed about its targets (effective)
- ✓ Is properly organised and cost effective (efficient)