



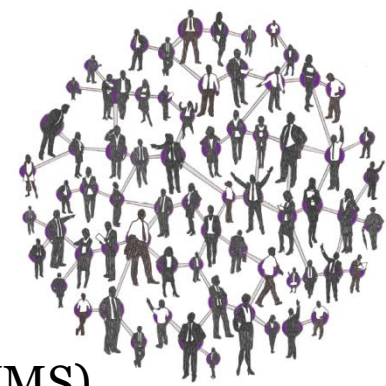
Danish Ministry of the Environment
Danish Geodata Agency

New Map Production Environment

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About the Danish Geodata Agency (GST)



In the Danish Geodata Agency, we are 300 employees.

Until 2013 we were called The National Survey and Cadastre (KMS).

We're the Danish national mapping agency and produce topographical maps for the Defence and for public use.

We're the Danish national hydrographic office and produce sea charts and ENC for Danish waters (incl. Greenland).

We're the Danish cadastral authority and keep the cadastre registry and process cadastral survey.

We're partly government financed, and partly through revenue from selling sea charts and ENC, fees connected with cadastral services, and fees for various geodata consulting tasks.

We're part of the Danish Open Data Programme, where we give away a lot of public data for free to generate growth in private sector and a more effective public administration.



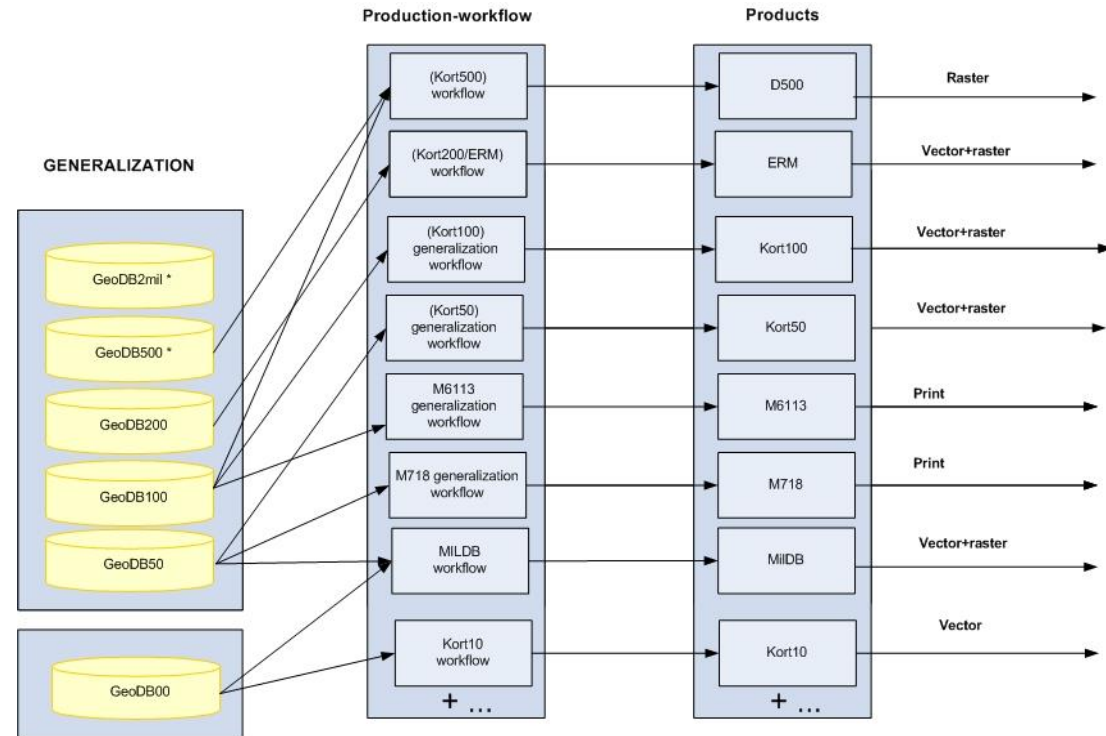
Why is it necessary to develop a new Map Production Environment?

Before:

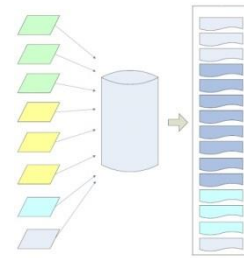
- Locally stored data
- Multiple users editing own copy in the same scale
- Each map series had its own settings and visualization

Potential problems:

- Data out of date
- Inconsistent update of the same feature
- Inconsistent visualization of data
- Ineffective sharing of resources



Introduction to the Map Production Environment

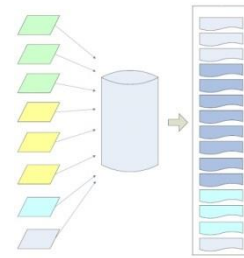


Project "Maps without Hands 2.0" (2013-)

- teamwork, development
- efficient cartography, modernisation



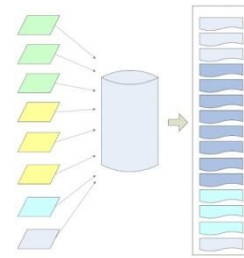
Introduction to the Map Production Environment



Main principles

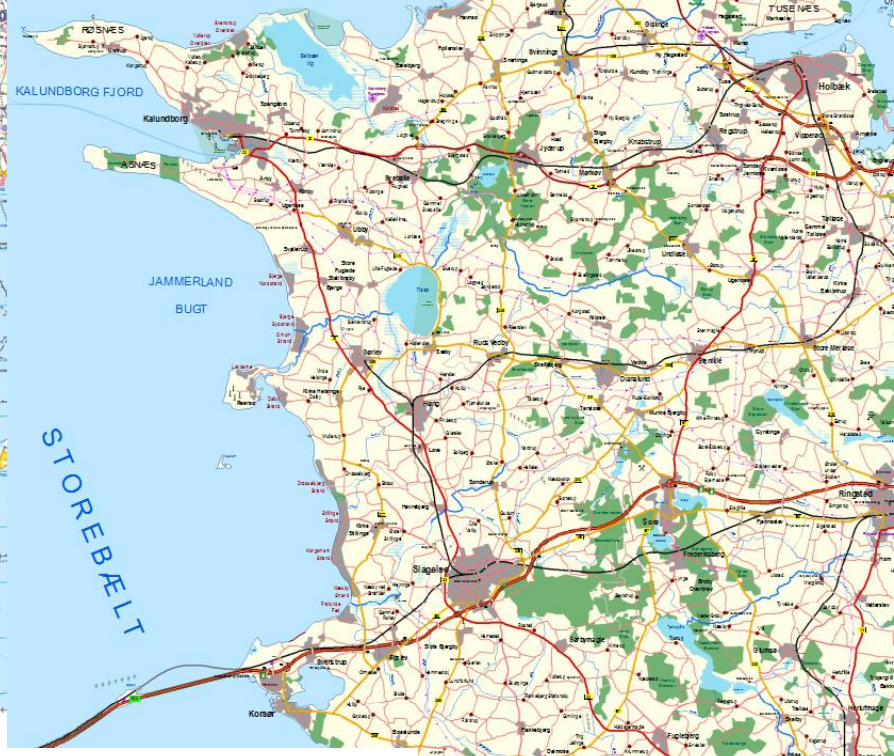
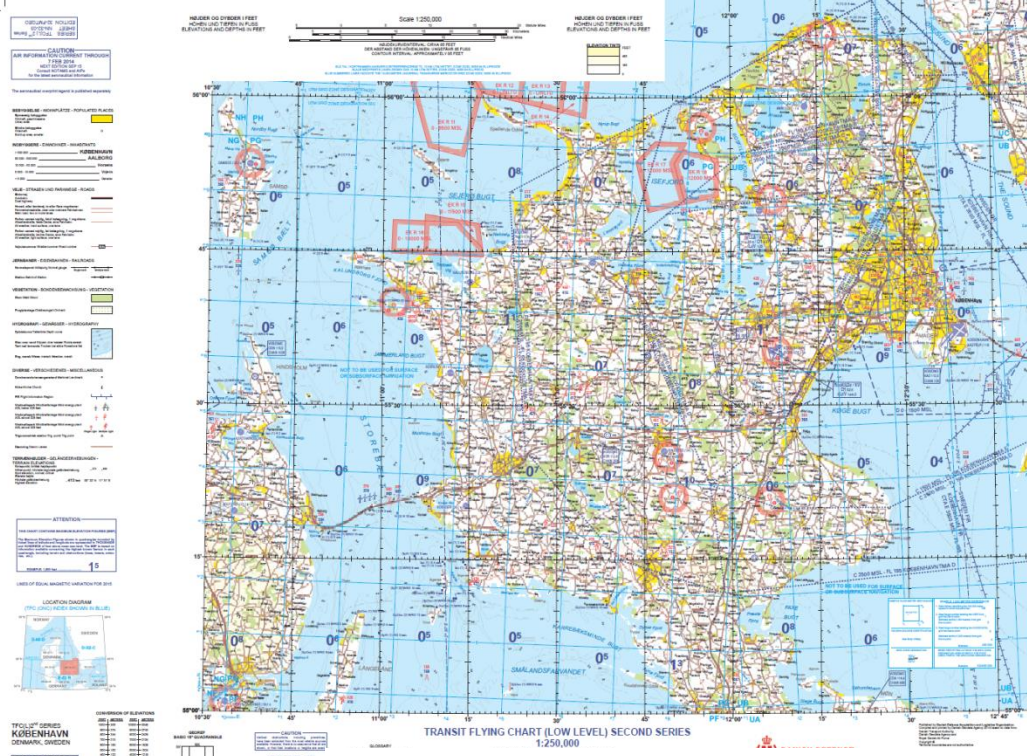
- One data model – for all maps and scales, same coordinate system (geographic WGS84), map-specific projections
- Shared data – no local copies, only one dataset per scale
- Rule-based visualization – homogenous map production, less dependency on key persons, minimal amount of manual work
- Automatic continuous updating – when base data are updated, it is automatically applied to the MPE

Introduction to the Map Production Environment

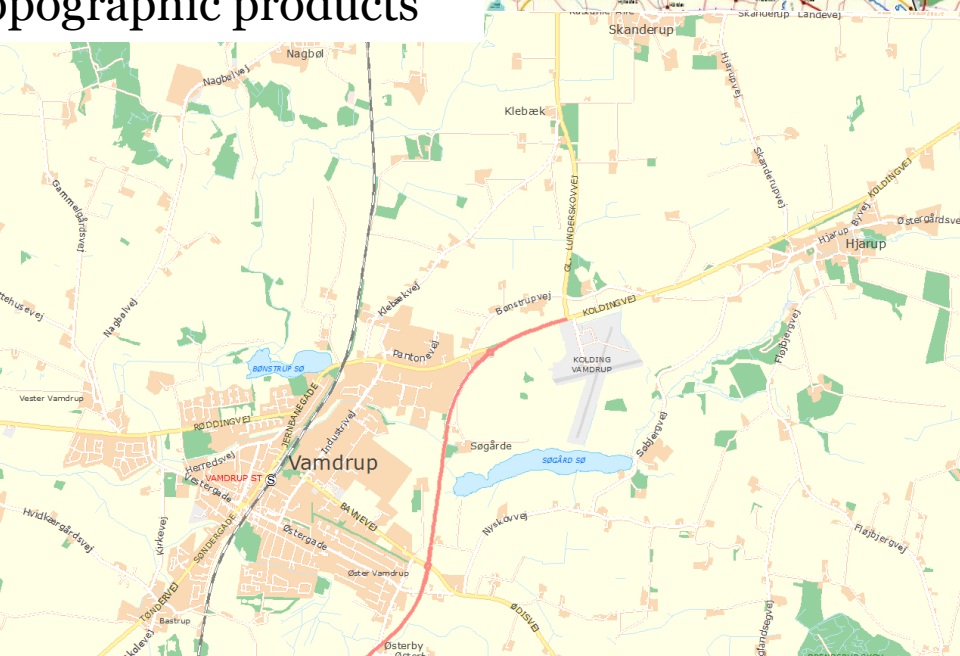
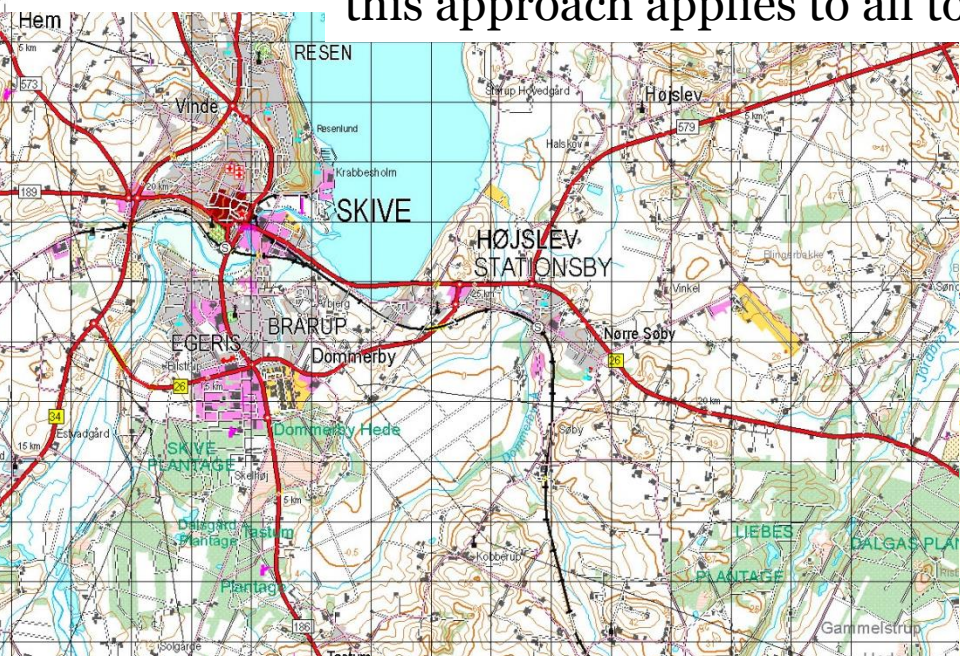


Advantages / efficiency:

- Standardised production platform – for products and services, uniform documentation
- Faster updating – GST can speed up the frequency from 3 to 1 year (or less)
- Quick and easy development of new products – ”pick’n use-principle”, products on demand
- Ready for international mapping – ”on demand” anywhere in the world
- Fewer resources – automation, more effective tools, reuse of data, representations etc.



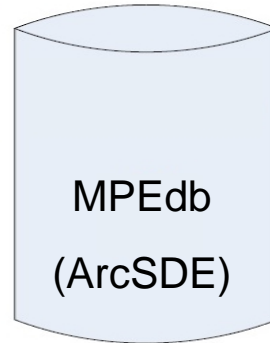
this approach applies to all topographic products



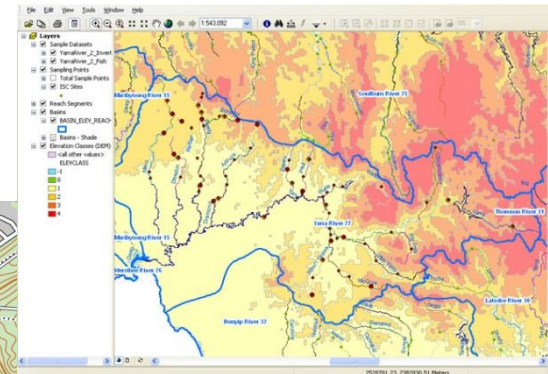


2 main activities:

Base Data

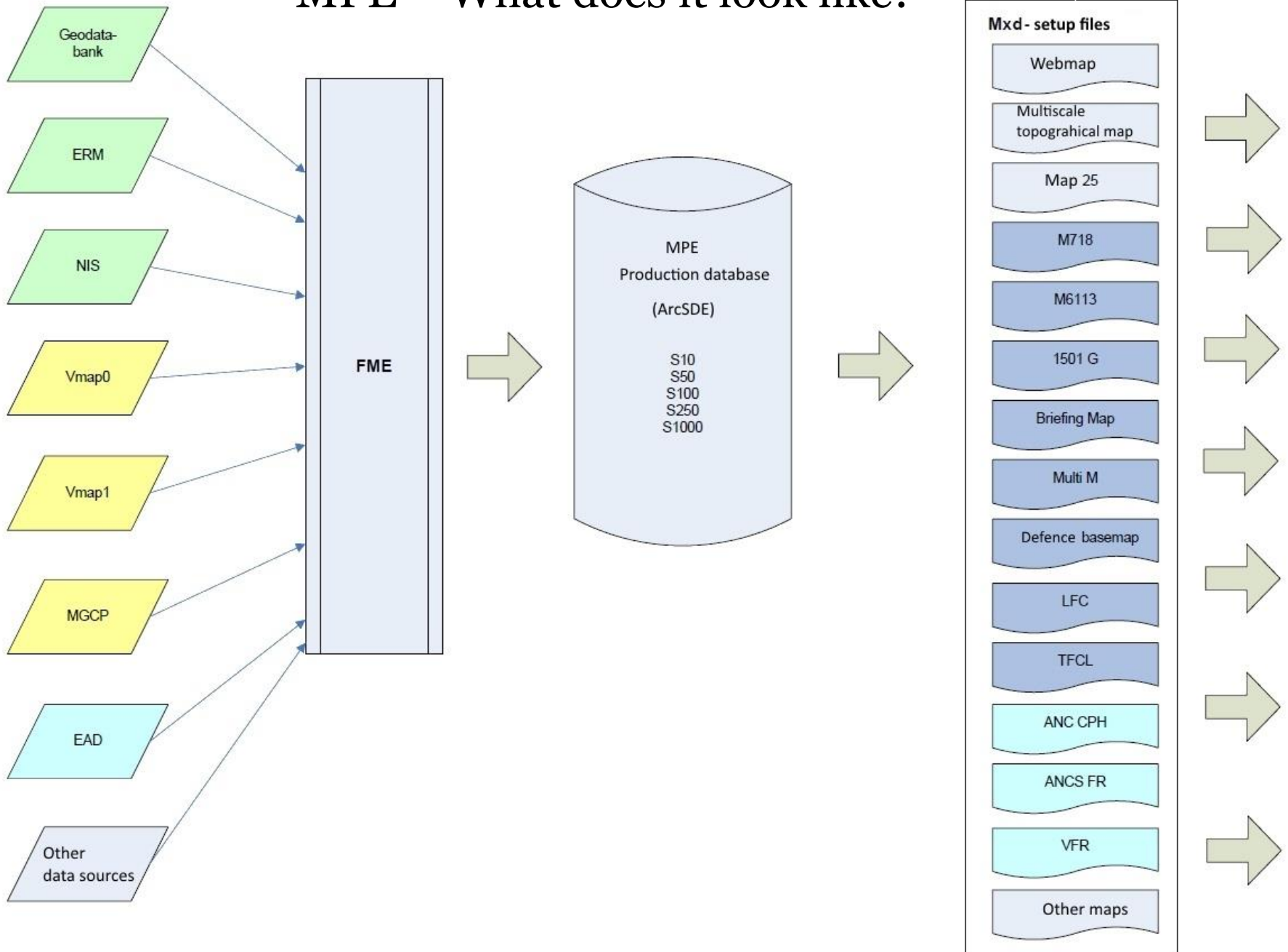


Visualization

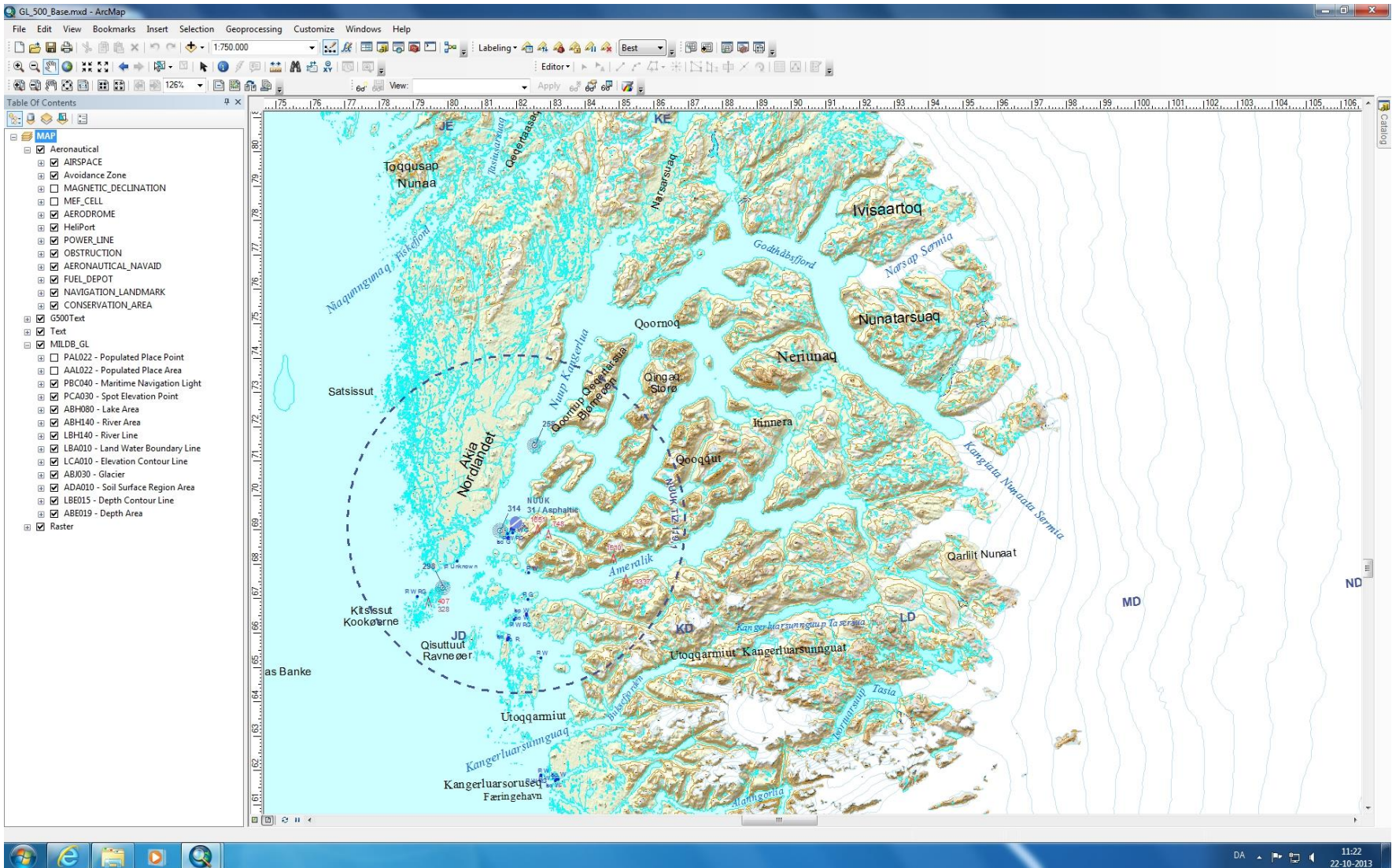


- including introduction of
cartographic representations

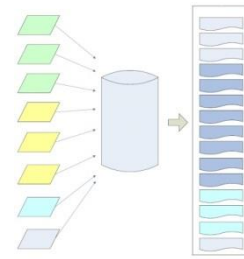
MPE – What does it look like?



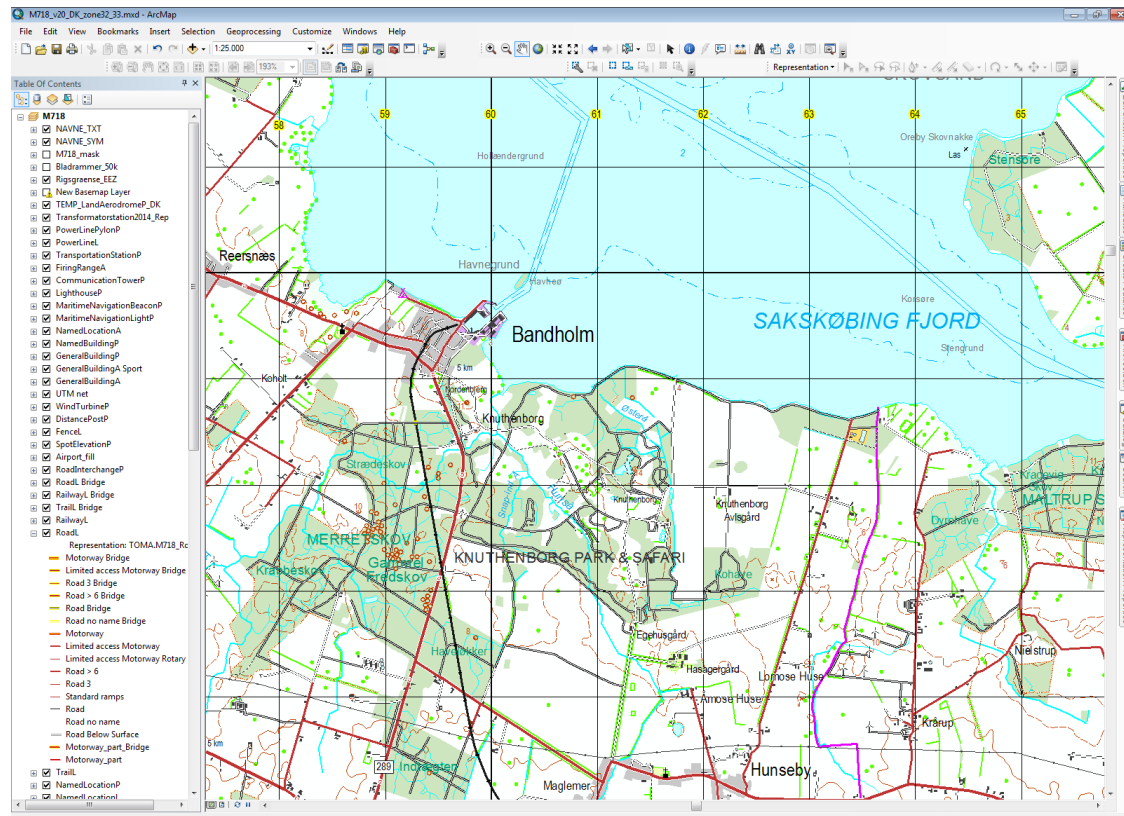
Map Production Environment is worldwide



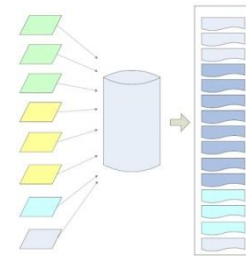
Production example: 50k defence map



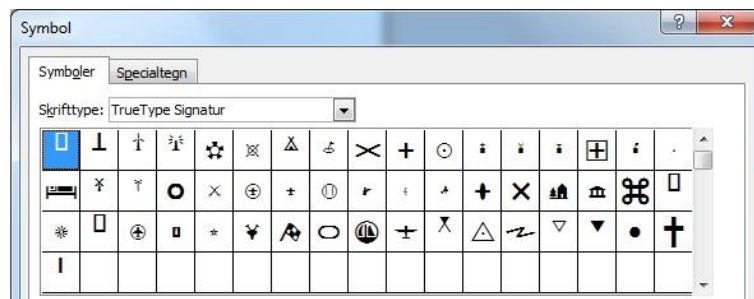
- making generalised scale 50k-data ready in the MPE-model
- mapping base data to the MPE
- setting up mxd, incl symbols and representations
- developing mapsheets, frame texts, grid, etc.
- cutting out data for mapsheets using a script, Data Driven Pages
- delivery of complete series of 115 map sheets covering all of DK in 2014



Setting up mxd, including symbols and representations



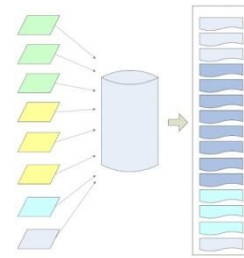
Creating a common, customized GST-font:



Writing visual specifications (defining representations):

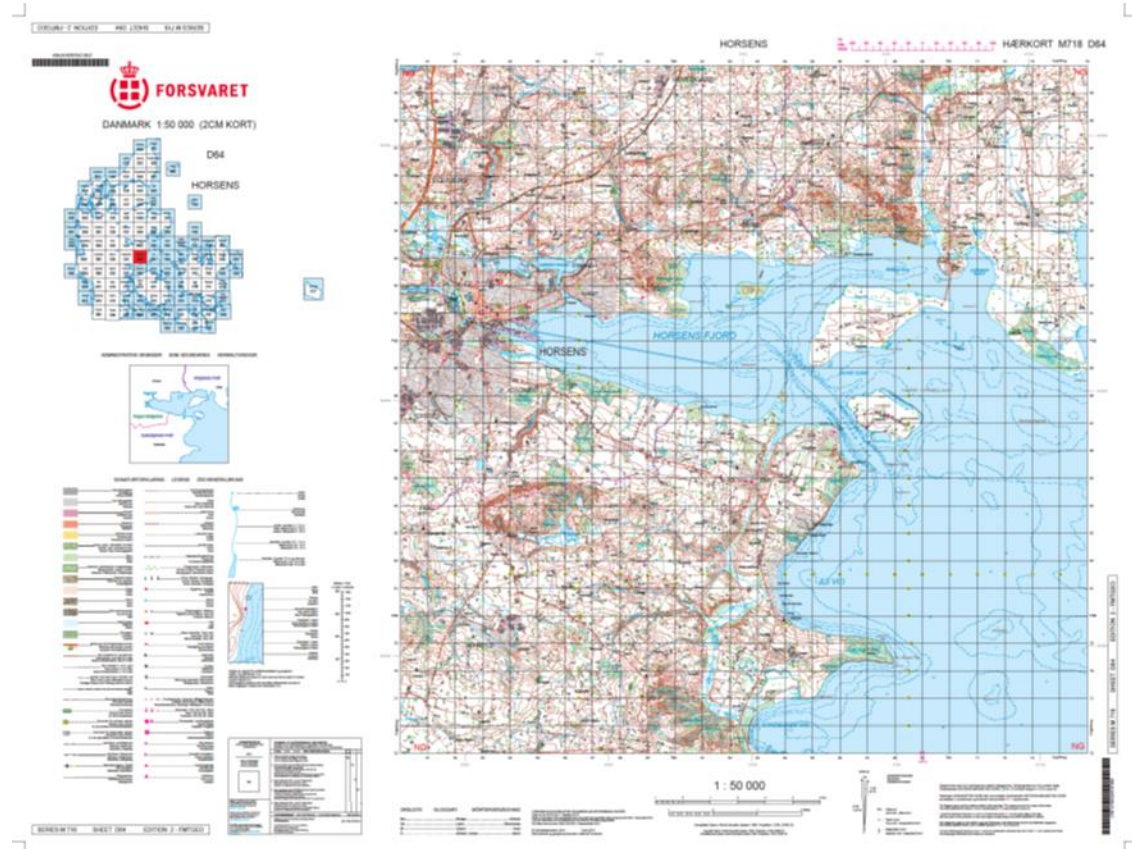
Rule GUID	Rule Type	Specific	Descr	Processing	Rule Description	Workspace	Dataset	Layer	Rep/Field Name	Pre Code	SQL Statement
{002D71DC}	Represent	M718		106	Adm	kpmb_m718-toma.sde	NamedBuildingP	NamedBuildin	M718_NamedBuildingP	...	SELECT <Target Table>
{03EF295F}	Represent	M718		47	AdministrativeRegionA_L		AdministrativeRegion	Administrative	M718_AdministrativeRegionA_L	...	SELECT <Target Table>
{D78E8627}	Represent	M718		95	ApronA	kpmb_m718-toma.sde	ApronA	ApronA	M718_ApronA	...	SELECT <Target Table>
{E4788105}	Represent	M718		115	Beacon	kpmb_m718-larsho.sde	MaritimeNavigationE	MaritimeNavig	M718_MaritimeNavigationBeacor	...	SELECT <Target Table>
{06AFC060}	Represent	M718		41	BerthingStructureL	kpmb_m718-toma.sde	BerthingStructureL	BerthingStruct	M718_BerthingStructureL	...	SELECT <Target Table>
{2D63422C}	Represent	M718		40	BreakLineL	kpmb_m718-toma.sde	BreakLineL	BreakLineL	M718_BreakLineL	...	SELECT <Target Table>
{F97B335B}	Represent	M718		75	Building	kpmb_m718-toma.sde	GeneralBuildingA	GeneralBuildin	M718_GeneralBuildingA	...	SELECT <Target Table>
{09DCDBE}	Represent	M718		77	Camping	kpmb_m718-larsho.sde	NamedLocationA	NamedLocat	M718_NamedLocationA	...	SELECT <Target Table>
{62647B6F}	Represent	M718		15	CemeteryA	kpmb_m718-toma.sde	CemeteryA	CemeteryA	M718_CemeteryA	...	SELECT <Target Table>

Production example: 50k defence map



Development of

- frame
- mapsheets
- texts
- grid
- legend



Creating uniform documentation

Standing Operating Procedure for

Series Transit Flying Chart (Low Level)

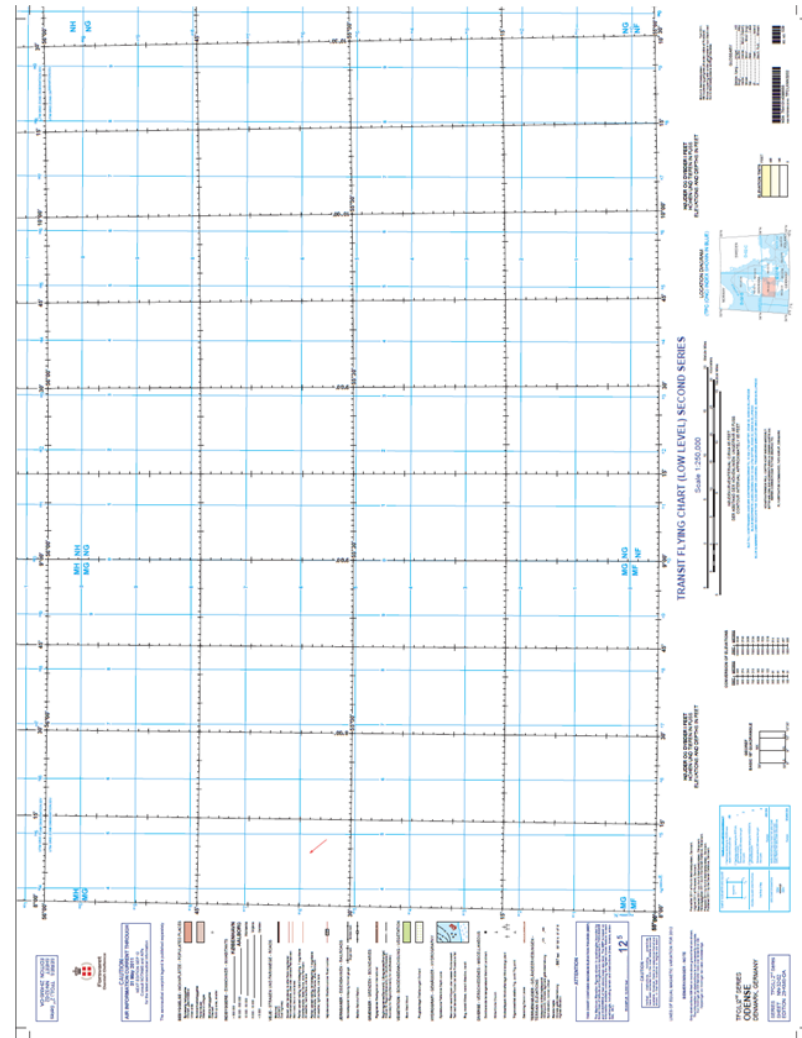
Scale 1:250.000

Produced by
Danish Geodata Agency, Denmark

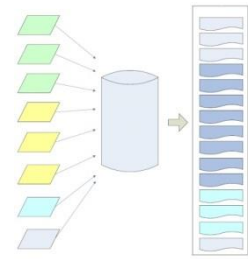
Refer to this document as:
SOP for IFC(L)
Edition 2-GST

1

3. Data Frame:



Modernising 50k defence map



2010 (Maps without hands)

Total DK production from base scale
(1:10.000) to end product (1:50.000)
1½ years (from start to print)
10-15 employees involved



2014 (Maps without Hands 2.0)

Total DK production:
1½ years (but fewer resources)
5 employees involved

Cartographic production time:
average **36 hours** pr. map sheet



Cartographic production time:
4½ hours pr. map sheet

Generalization process:
9 months for all of DK



Can potentially be improved

But input data have to be valid and complete!



- Data have to be valid and complete
 - FOT (collaboration with municipalities on data collection)
- Data have to be prepared for rule-based visualization
 - more control and QA

Thank you for your attention!

Questions?



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