



ENC Production

Option and outlook

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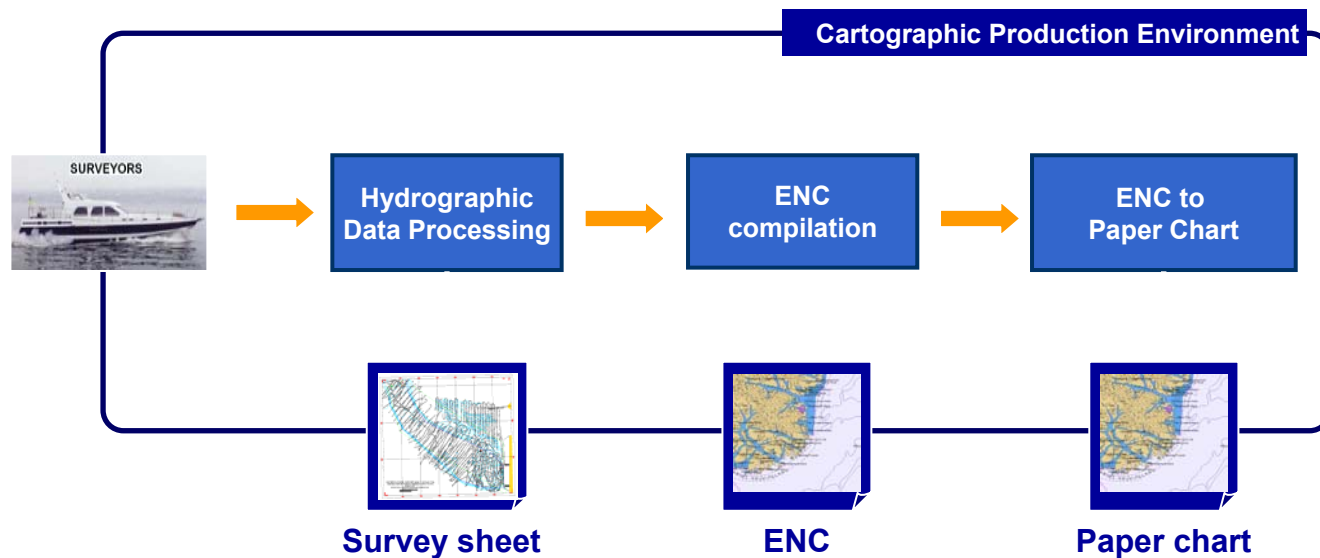
ENC based Cartographic Production flow

Unified production line:

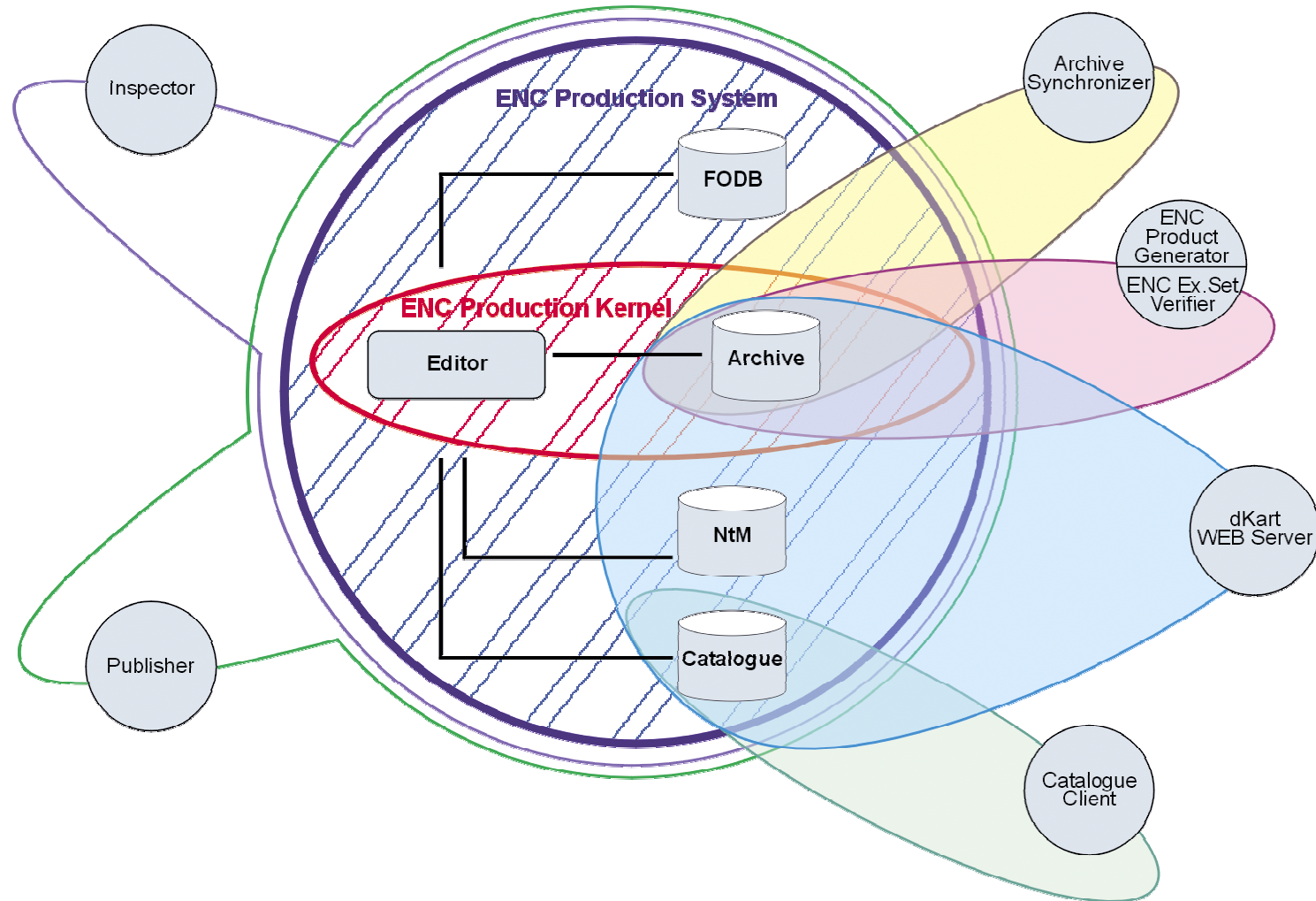
- Survey data processing
- ENC production
- Paper charts production

Consistent data interchange between process steps

- Survey sheet
- ENC
- Paper chart



ENC-Production Options: Integrated HO System

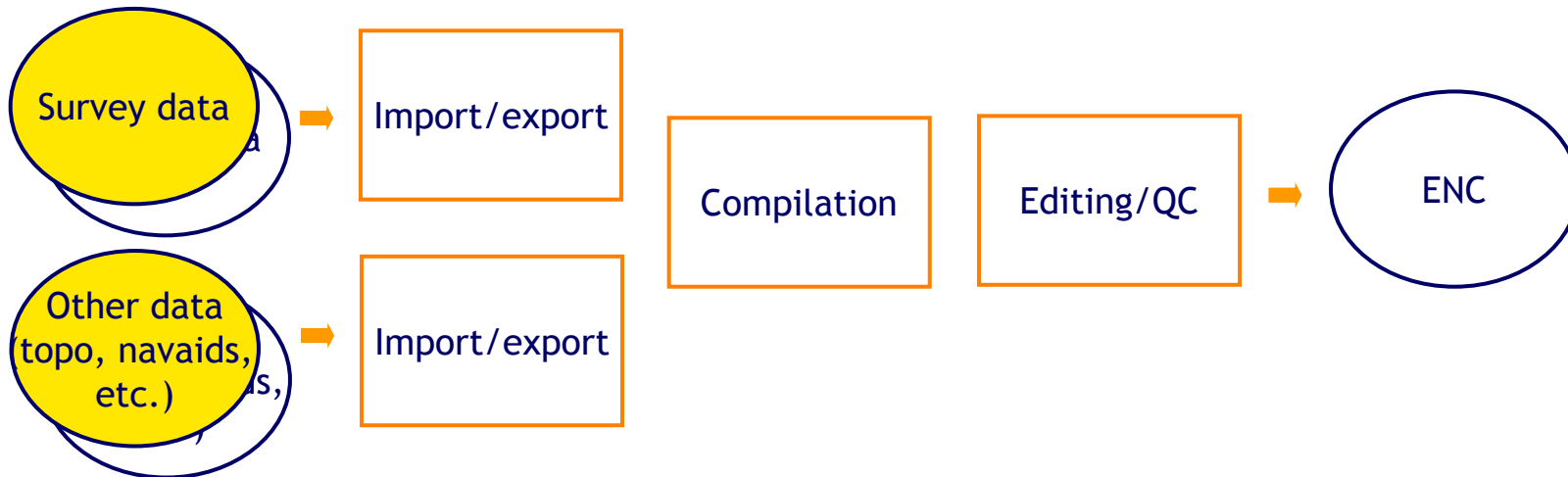


ENC Production Options

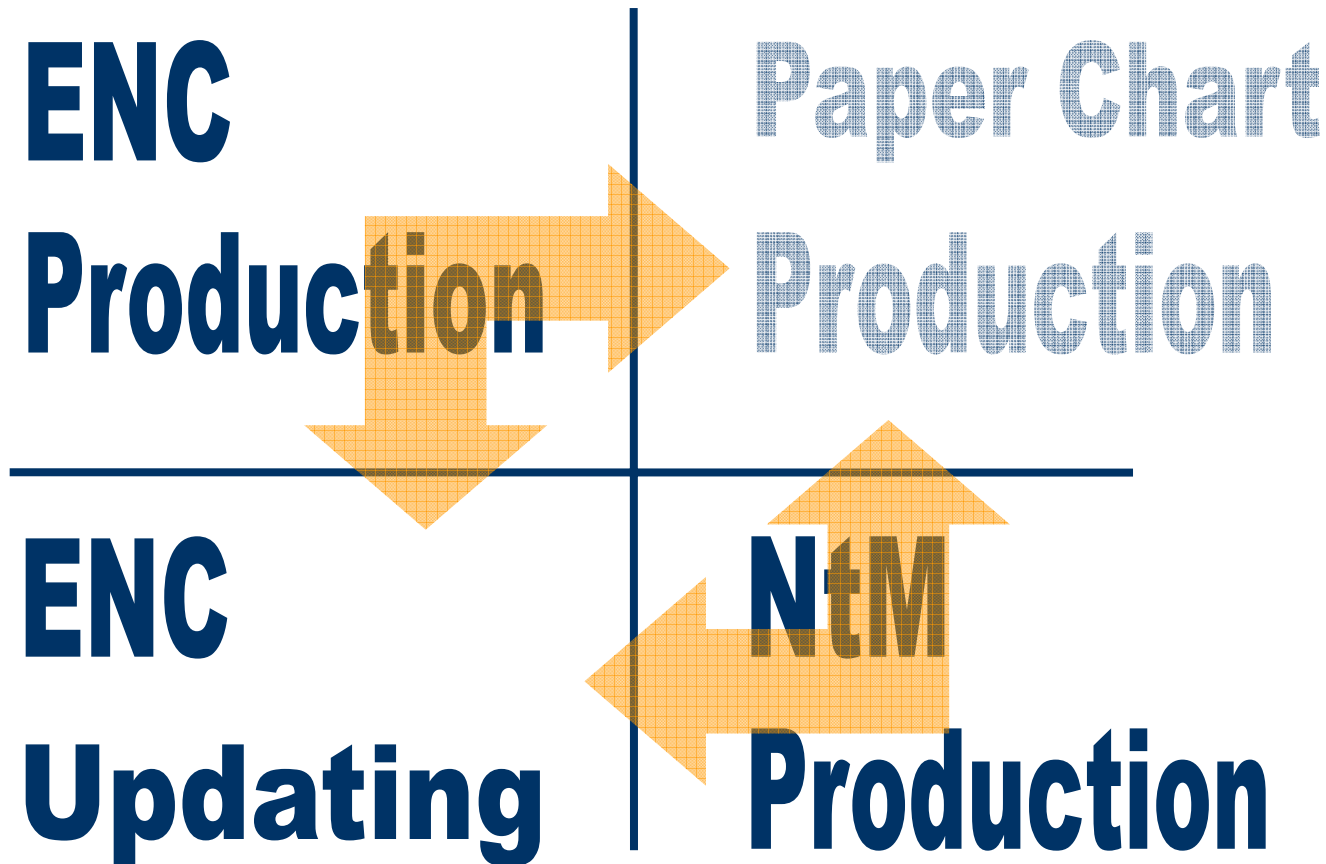
Survey Data Processing



Electronic Chart Production

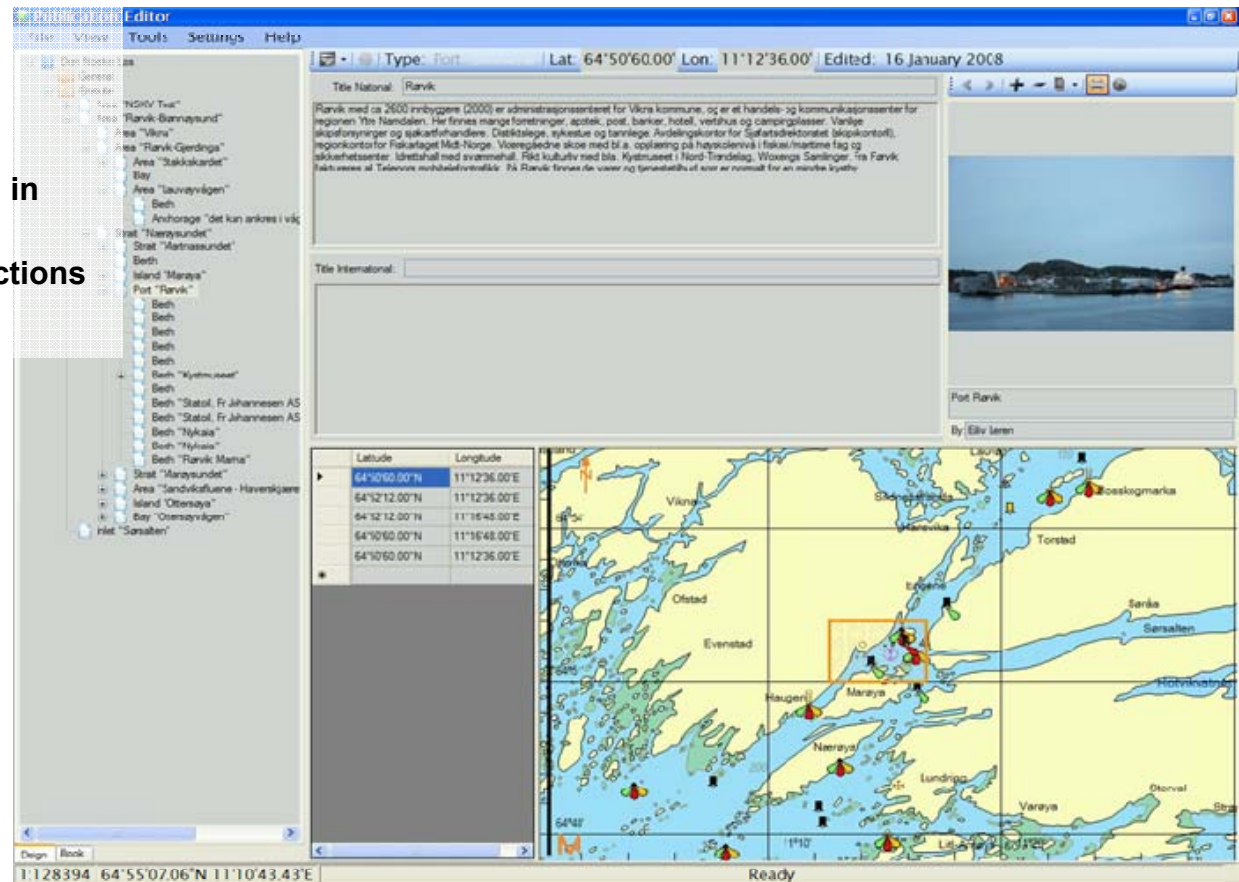


DON'T FORGET THE UPDATE

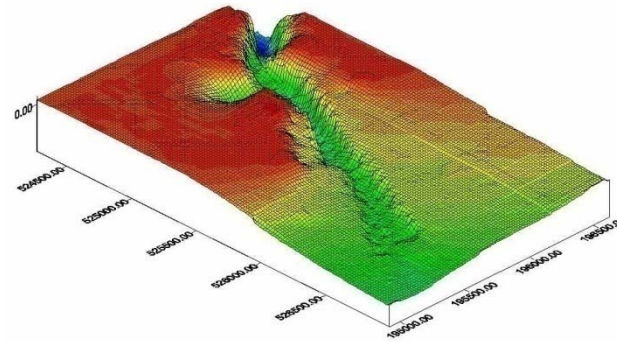
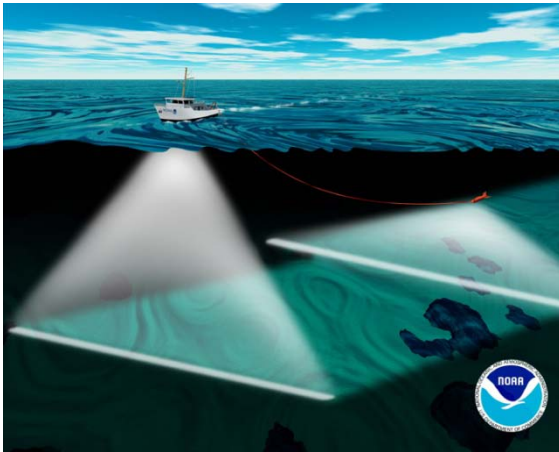


Integration of Services

- **Integrate Production:**
 - ENC
 - NtM
 - Publications
- **Maintenance only once**
 - Utilize ENCs as chart insets in Publications
 - Utilize ENCs in Sailing Directions



Future outlook Overview



Survey

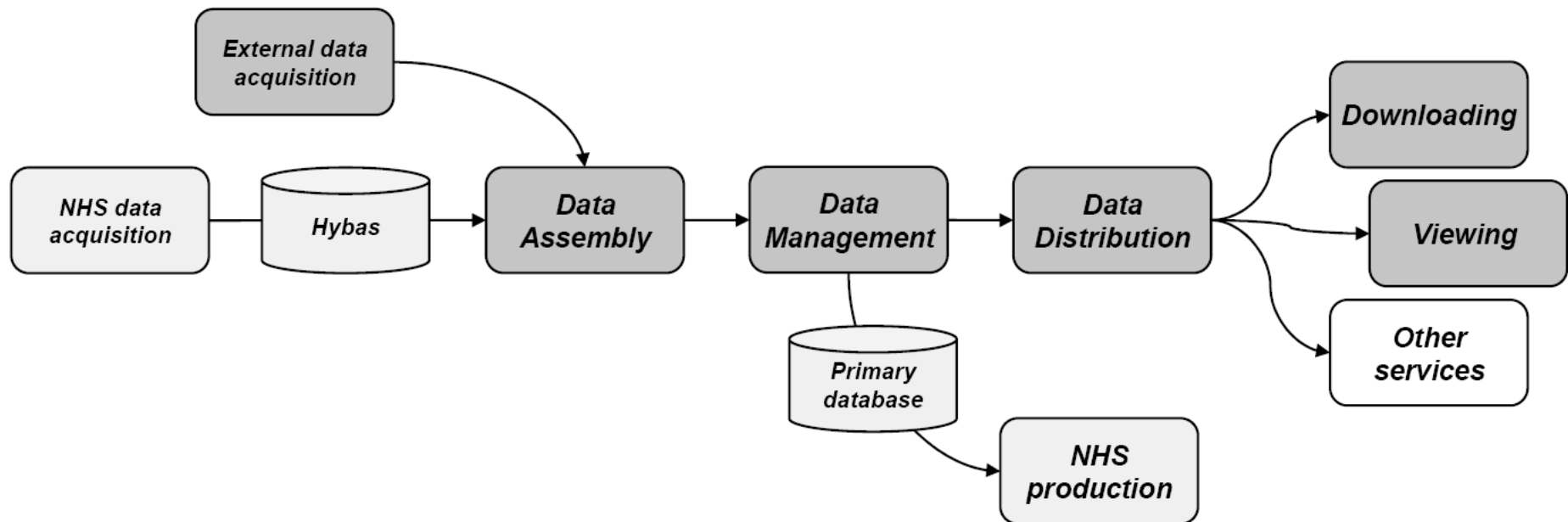
Bathymetry

Chart

Requirements

- **Data assembly**
 - reception and registration of data
 - establishment of terrain model
- **Data management**
 - compilation of models, processing and updating
- **Data distribution**
 - web-based viewer (2D/3D)
 - data downloading
- **ISO Standards**
 - 19xxx series (meta information)
- **S-100 Standard**
 - Gridded data (gain experience through this project)

System Modules

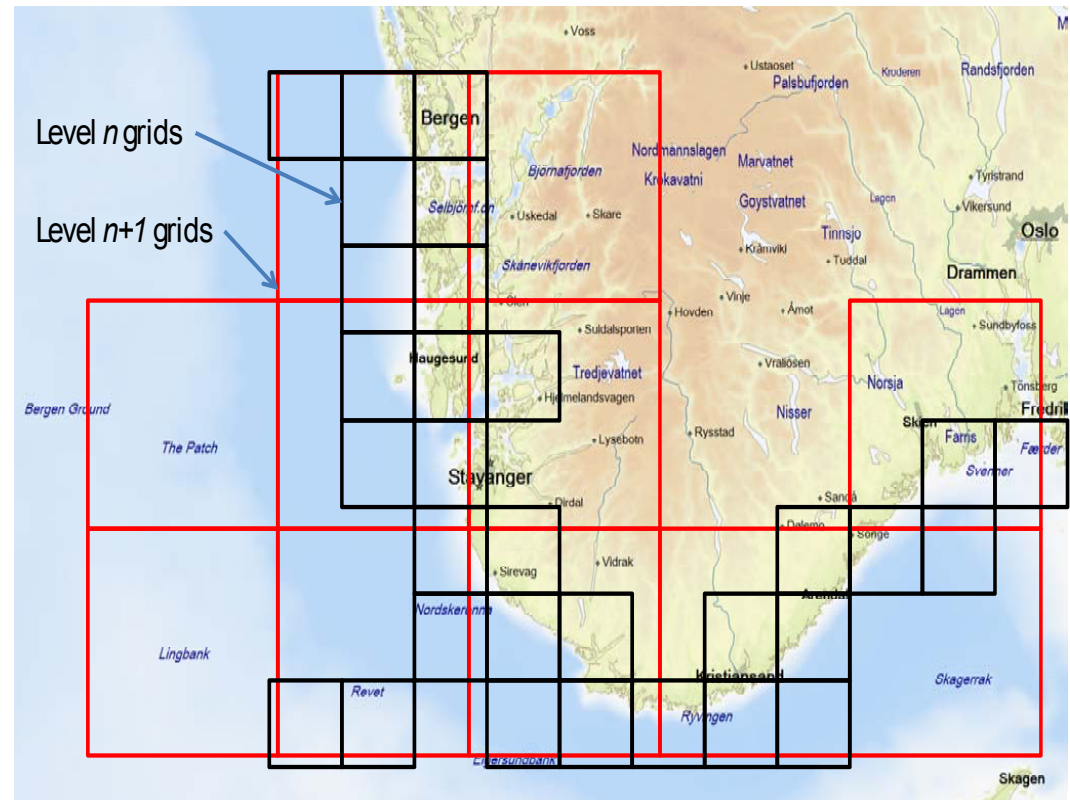


Data Assembly

- **Import data from survey**
 - Temporary storage
 - Processing
- **Import data from other sources (formats)**
- **Data editing and filtering**
- **Classification**
- **Resolve conflicts/errors**
- **Output: Terrain model + meta information**

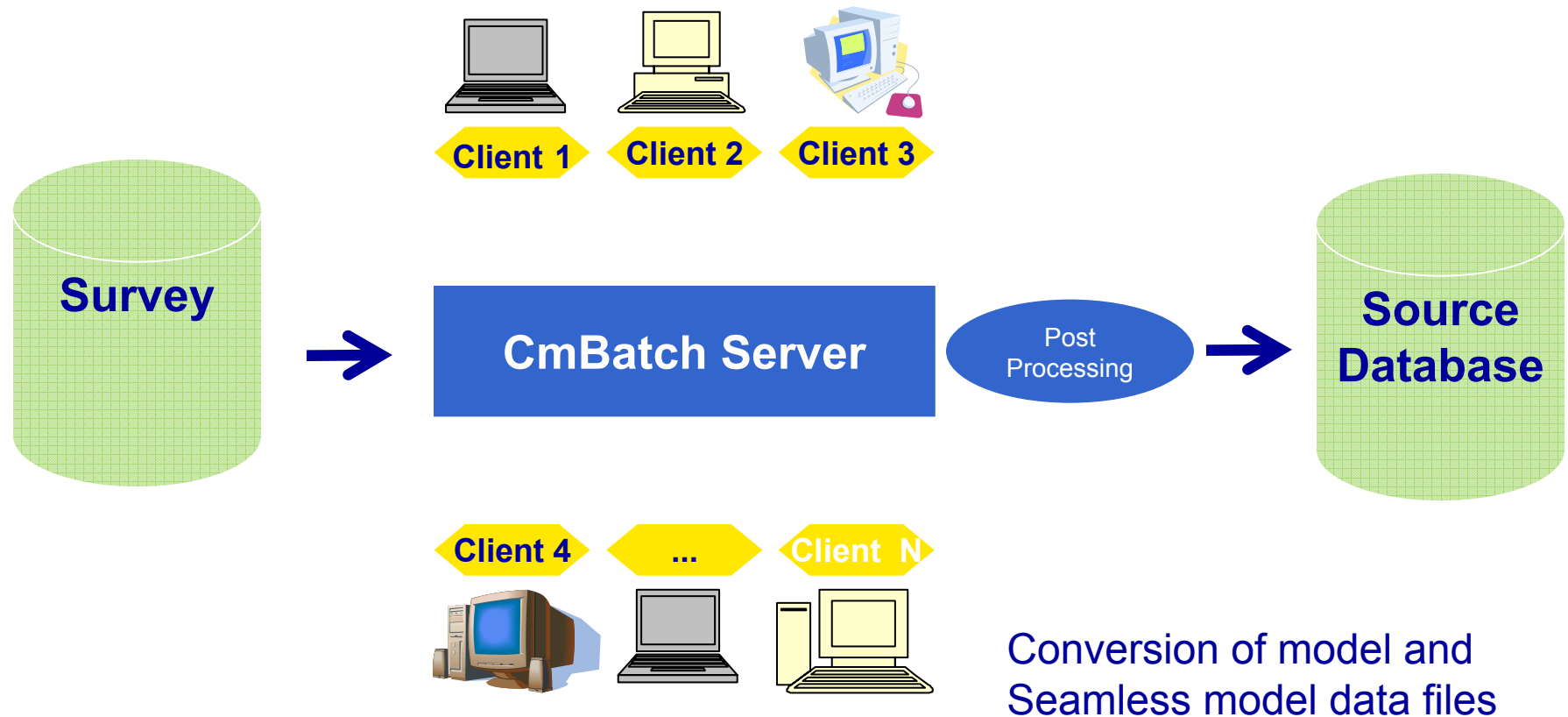
DA - Data Storage

-Shallowest -Median -Deepest -Uncertainty -Theme	-Shallowest -Median -Deepest -Uncertainty -Theme	-Shallowest -Median -Deepest -Uncertainty -Theme	-Shallowest -Median -Deepest -Uncertainty -Theme
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DA - Automatic Gridding

Leverage existing distributed processing software



Data Management

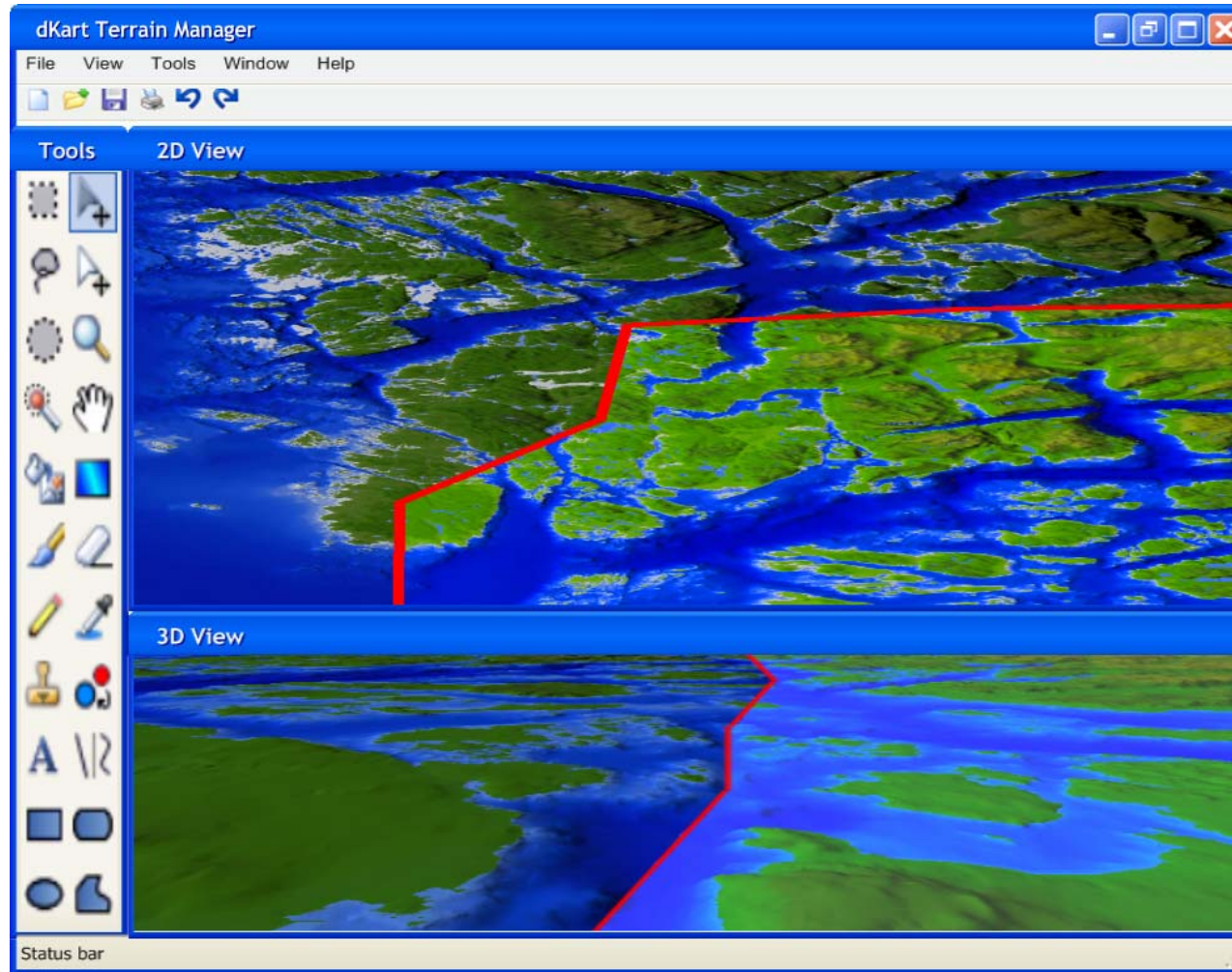
- **Combine terrain models to seamless DB**
- **Visualize data**
- **Error checking/quality control**
- **Editing**
- **Conversion (datum, projections)**
- **Clipping of data**

- **Output: Seamless terrain model + meta**

Potential output for validation or delivery



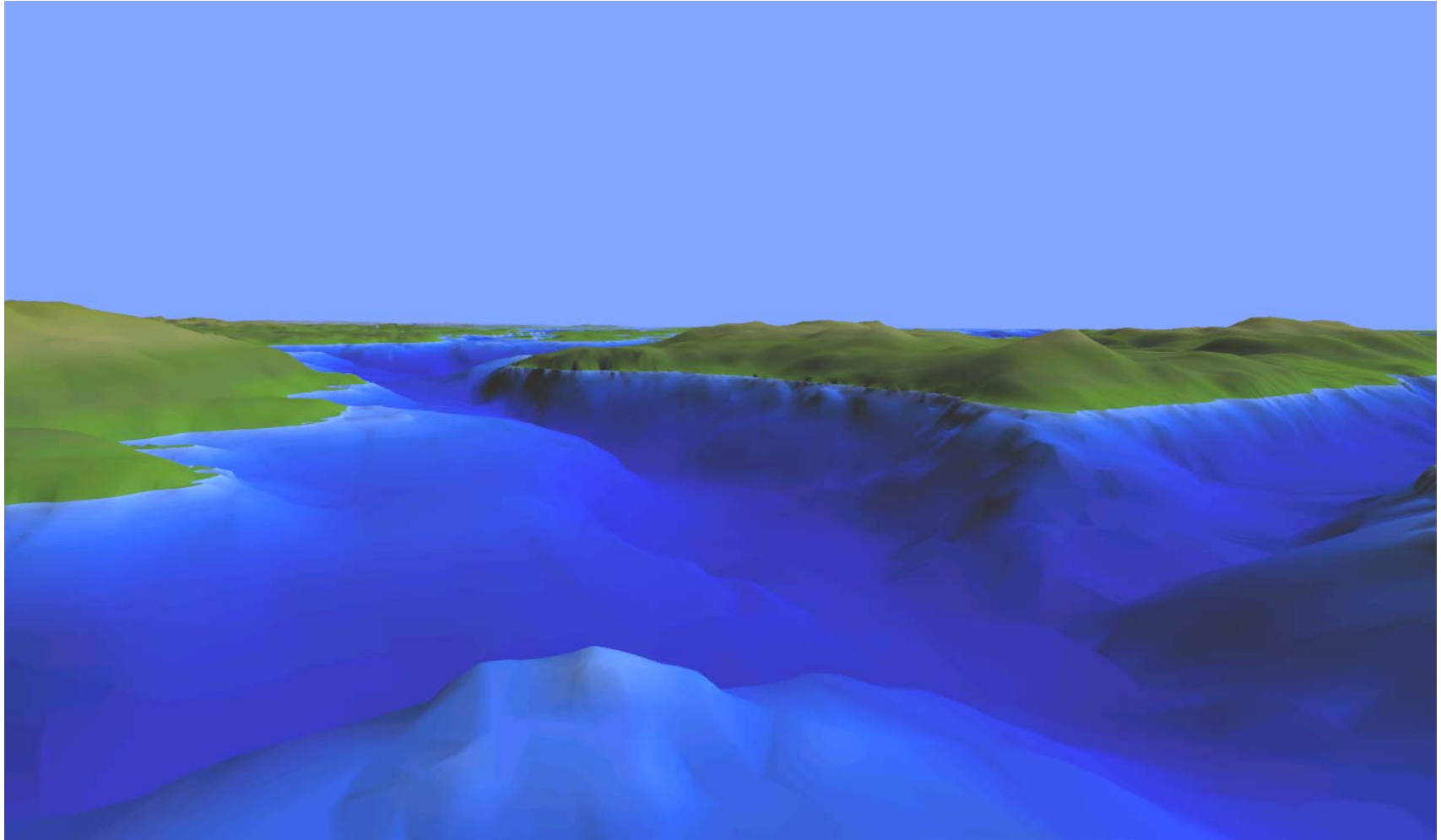
Combining Surveys



Shaded Relief



3D View



A black and white photograph of a lighthouse on a rocky island, with the sea in the foreground and a cloudy sky in the background. The lighthouse is a tall, dark structure with a lantern room at the top.

THANK YOU !