Implementation of AMDB at Avinor

AVINOR

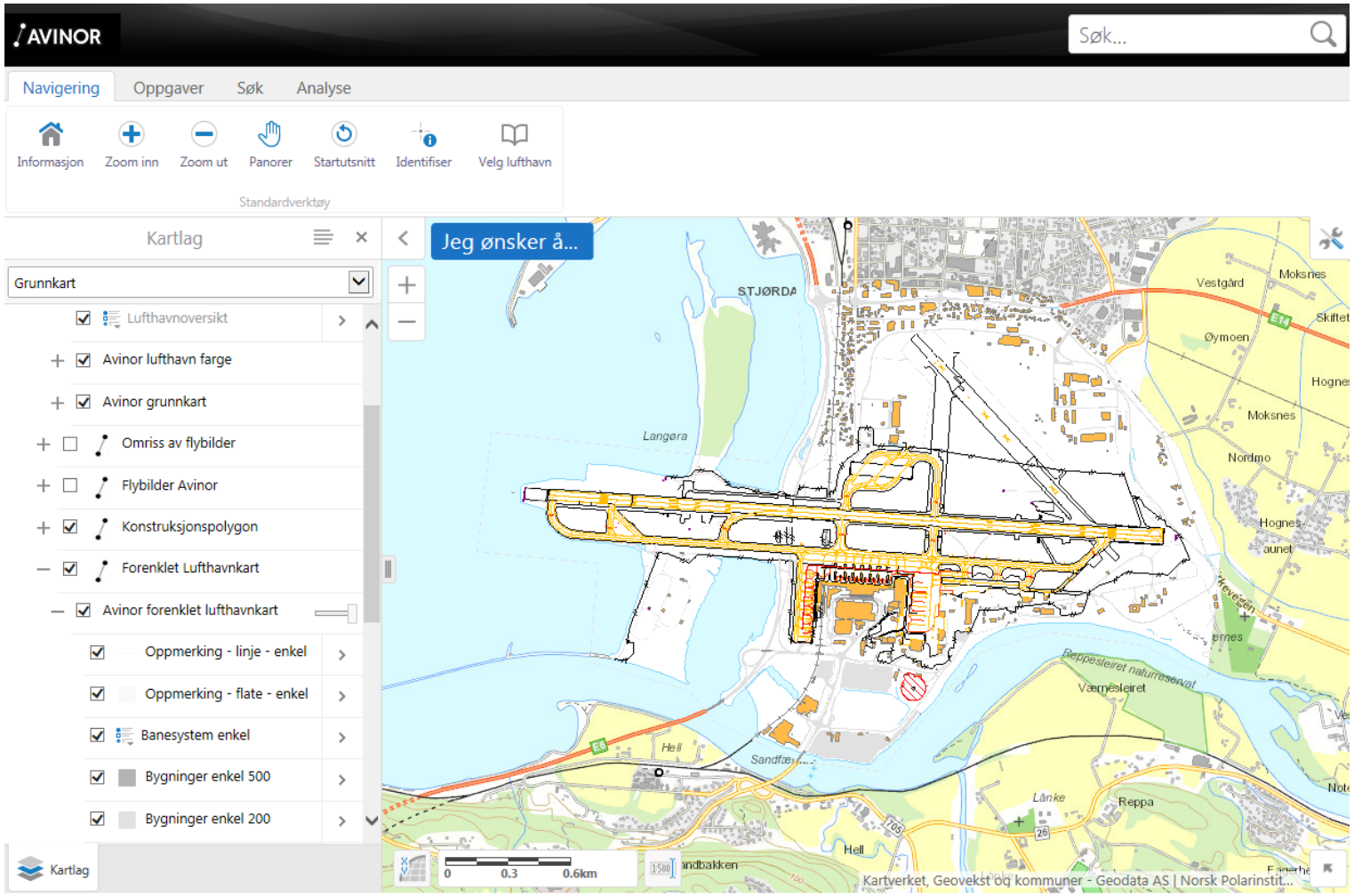
Avinor

- 46 airports in Norway
- 50 mill. passengers
- 400.000 patients flights
- 3300 employees
- 100.000 tons of salmon

Many exiting projects

Geographical data in Avinor

Web viewer with geographical data (both basic - and thematic data):



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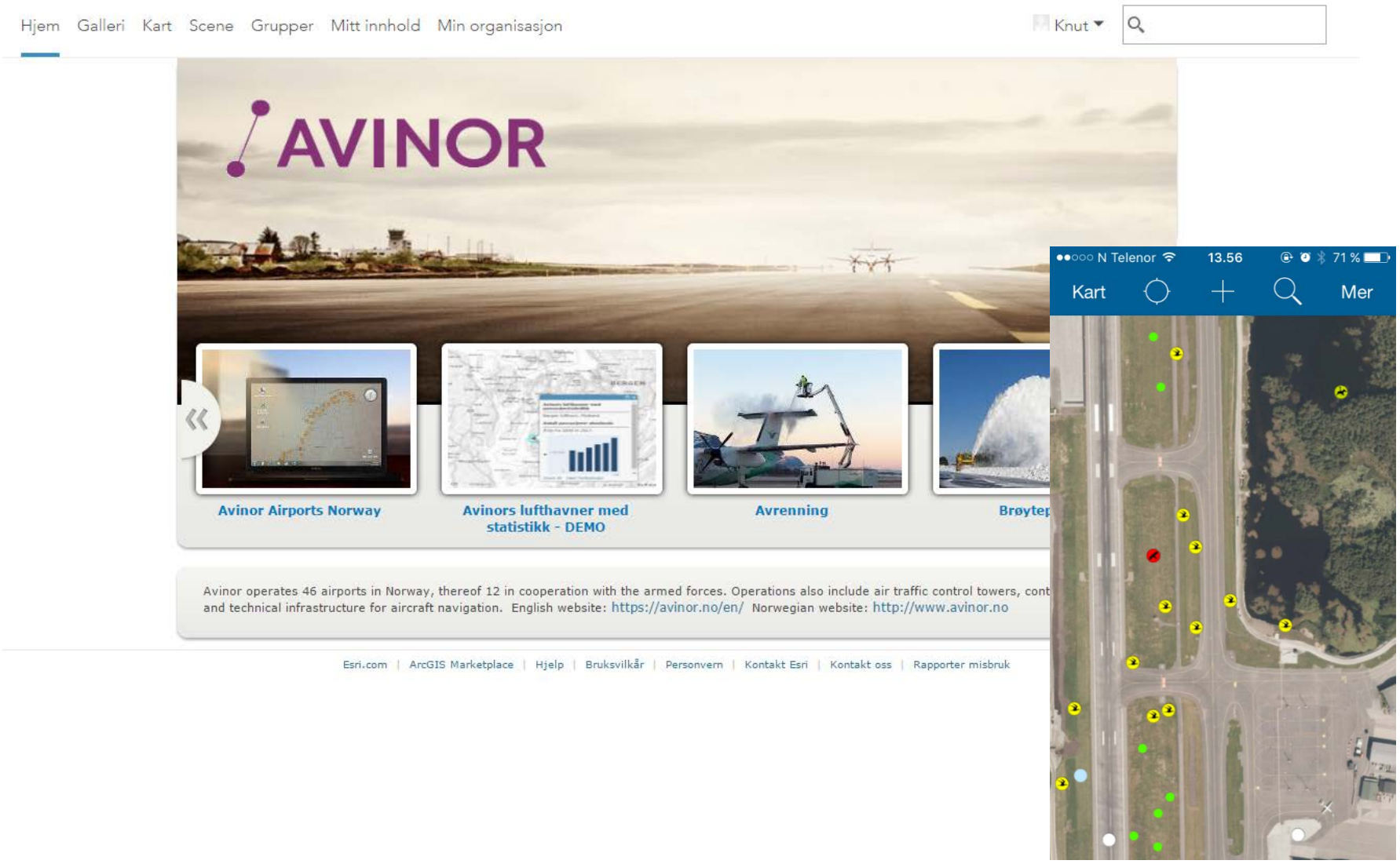
Arcgis online with geographical data:



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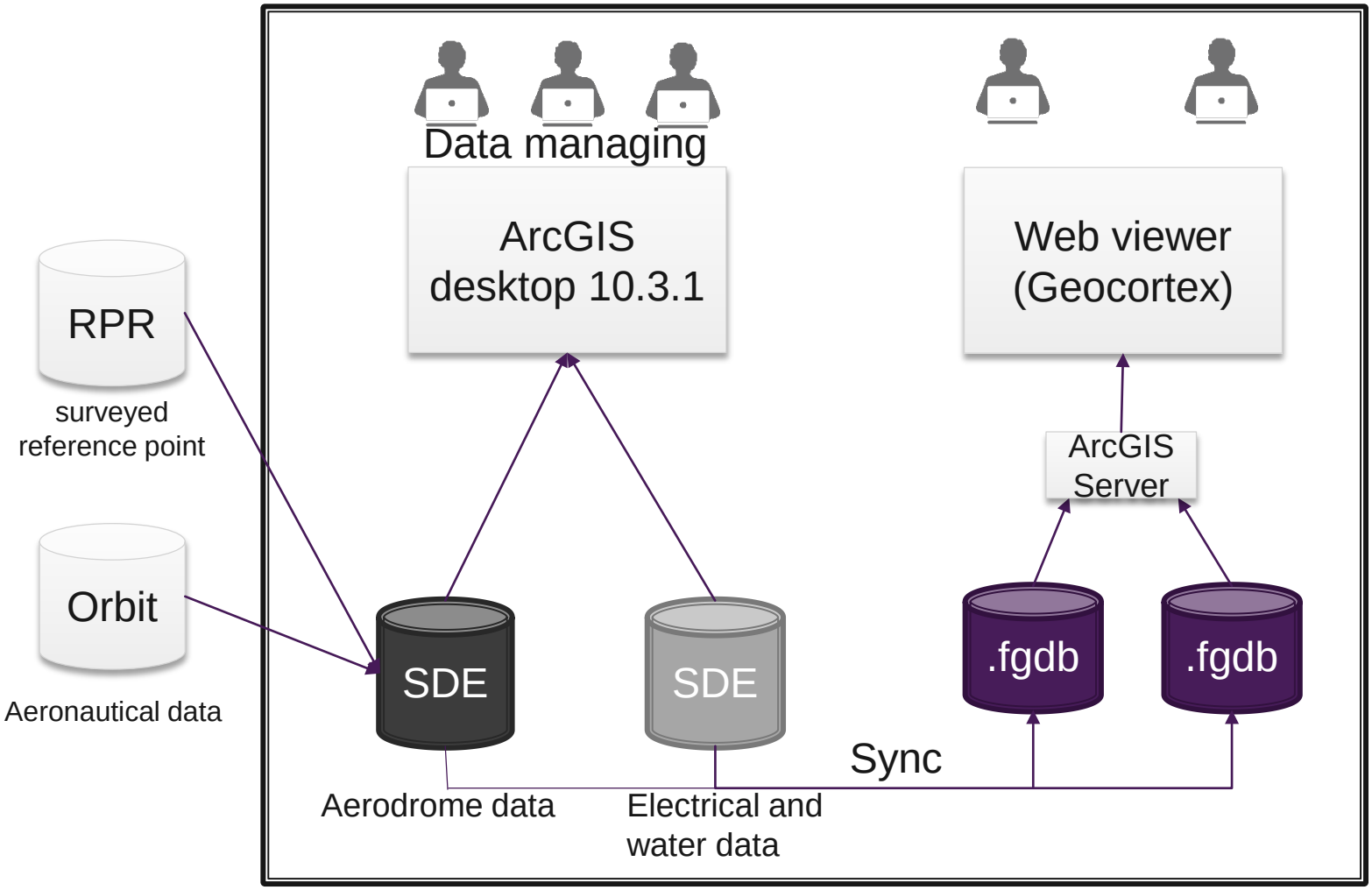
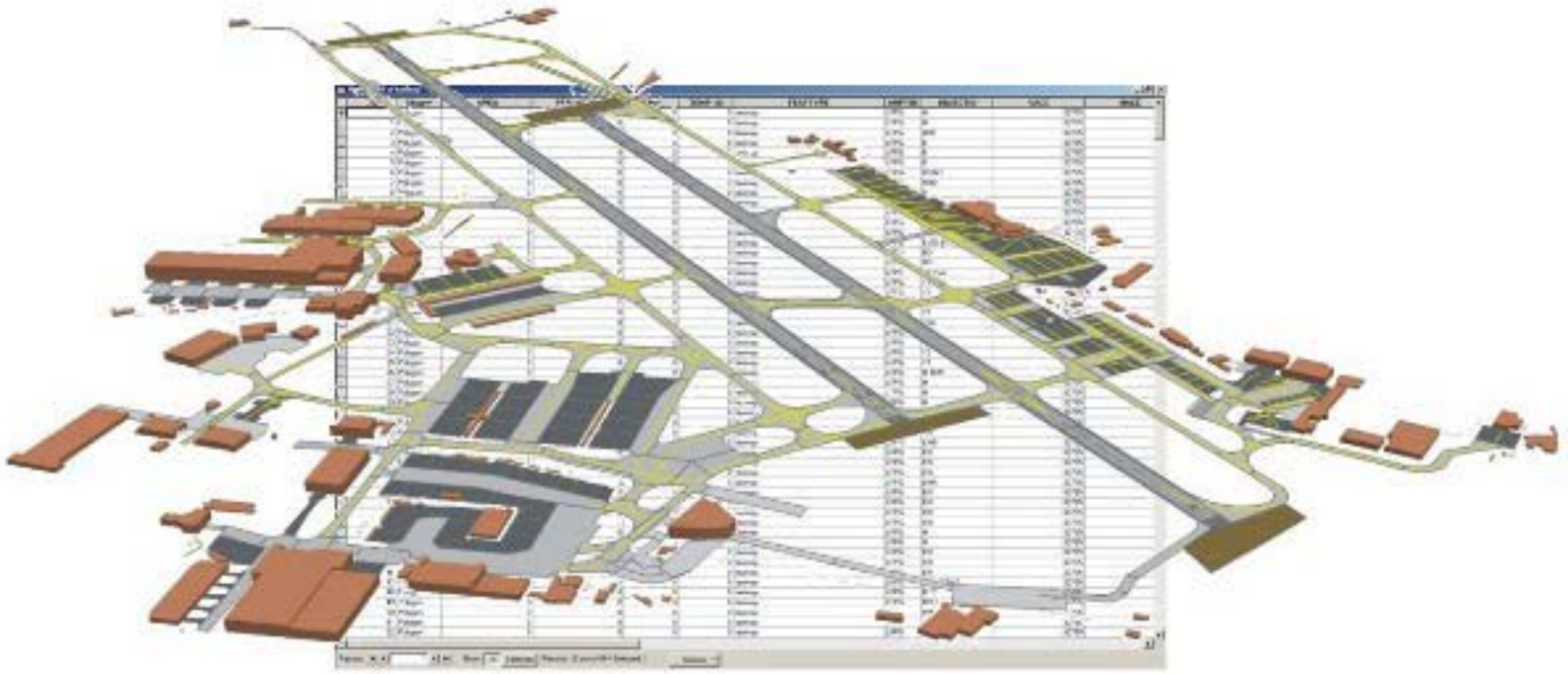
AvinorGIS - Data storage and dependencies



AMDB – What is it?

- Aerodrome mapping database – Eurocontrol standard.
- AMDB is a representation of the aerodrome that describes the topography of an aerodrome.
- Consist of features like runways, taxiways, parking stands and so on to describe an airport.
- Points, lines or polygons with attributes such as surface type and runway slopes.
- And not at least, a set of rules how to collect and implement the data.

AMDB: Geometry data and attribute data



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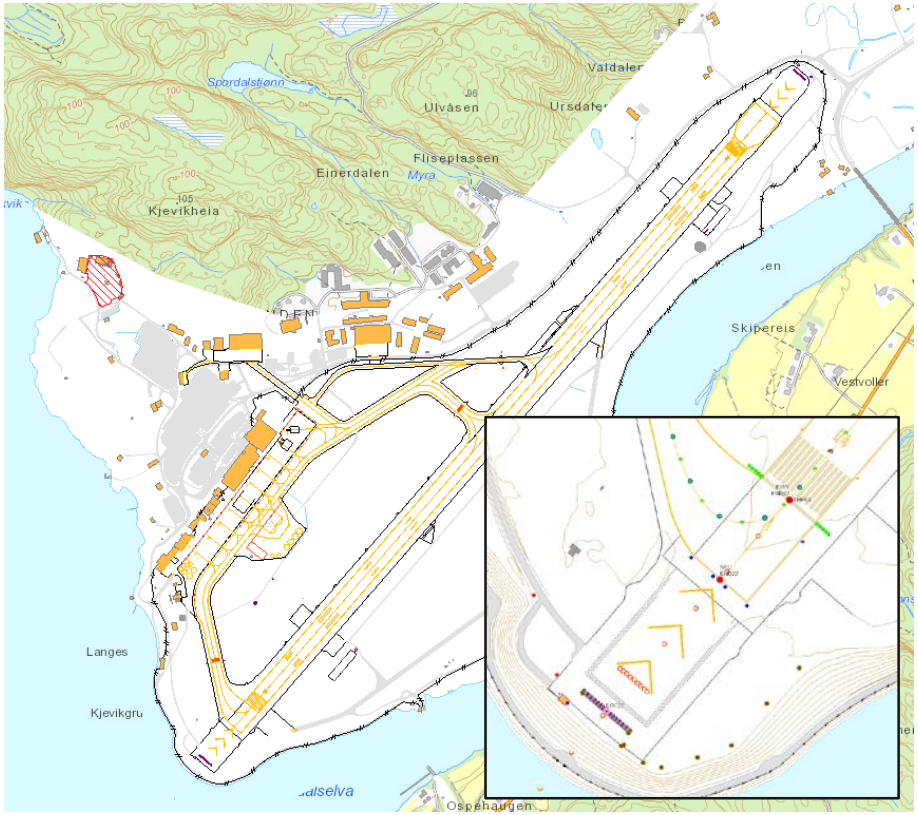
- Avinor has for many years collected data from all 46 airports.
- We wanted to find out if we could implement an AMDB with the use of existing data.



- With the help of Geodata (ESRI distributor in Norway) we did a GAP analysis

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GAP analysis - results

- We have some considerable gaps within our data compared to the requirements of an AMDB.
  - Missing data, missing attributes and different data model
  - We do not have the proper metadata, and we have no means of making the metadata available
  - Different routines for data management and surveying.

- So to implement an AMDB we have to do considerable changes.

GAP analysis – missing data

- Some data we do not have, like ASRN (Aerodrome Surface routing network).
- Some data we have, but we it will take a lot of job to transfer the data in to an AMDB.

GAP analysis – missing attributes

- Typical missing attributes:
  - Data quality
  - Object name
  - Data categories
  - Identification - not all features have a global ID
  - Feature level - Data for different features are in the same feature and attribute table
  - Historical data

GAP analysis – Identification and ID

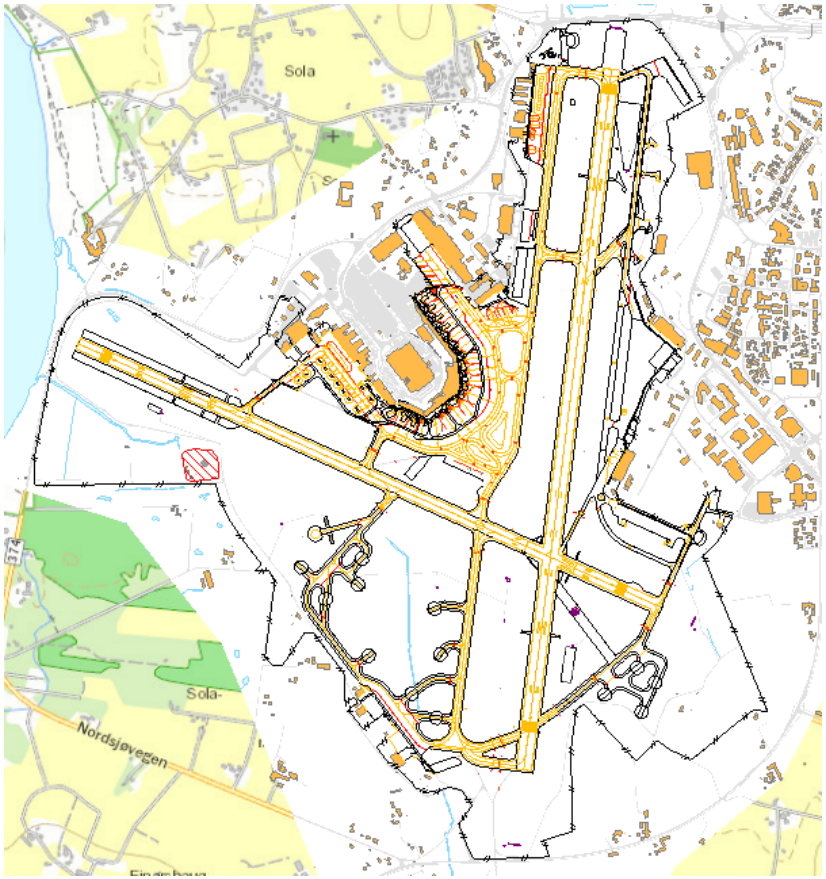
- When we collect data for an airport true surveying, we delete the old data before loading the new data.
- This means that every objects gets a different unique ID than the previous ones.
- By ADQ standards we can never change the ID for an object.
- So this means that we have to change the routines for export, surveying and data loading.
- We also has to change the routines for data management to prevent changes in the unique ID.

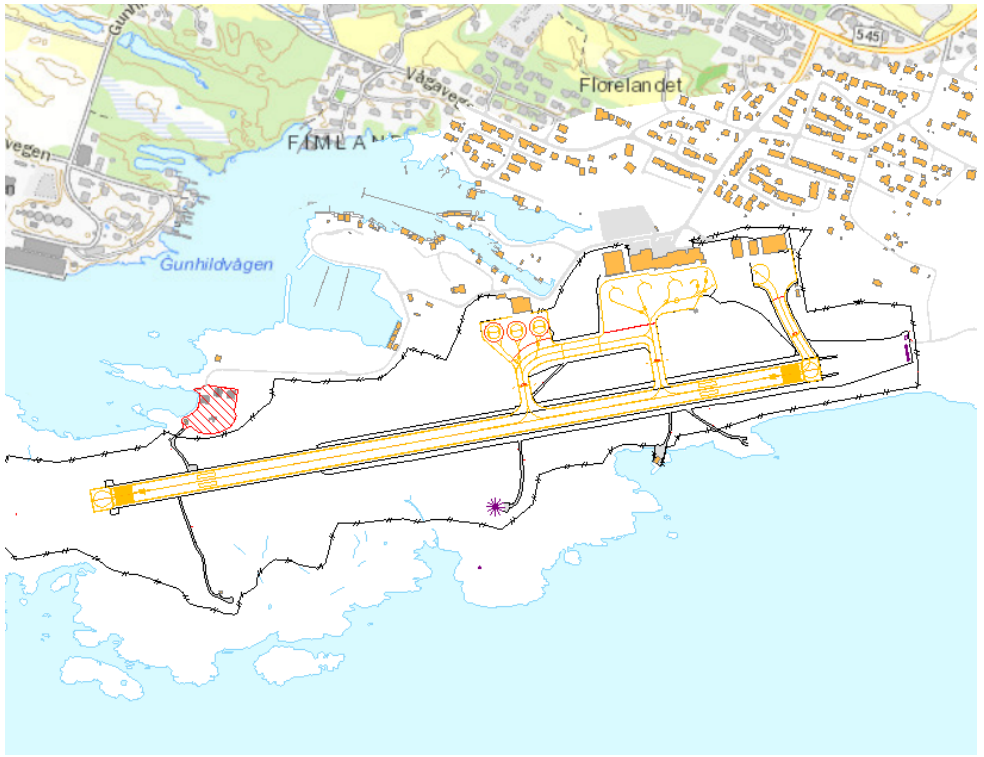
GAP analysis - Conclusion

- We concluded that we have to test new methods to collect and maintain data.
- So we asked Geodata if they could help us with a pilot for surveying data from 2 airports and load the data in to an test database that meets the requirements for AMDB.

Pilot for AMDB

- Two airports for data collection



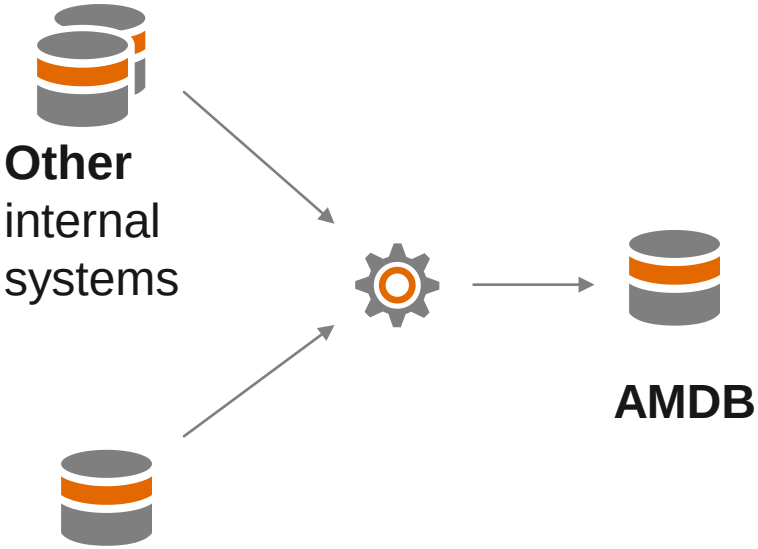


Avinor future AMDB export

Avinor GIS

Esri software tailored for airport data danagement

Datasets required are maintained in different systems on a daily basis



ADQ Compliant ?

ADQ Projects

- ADQ implementation at Avinor is seperated into several sub projects.
  - Sub project 3 covers data collection
  - Sub project 4 covers system adaptations

- Pilot project:
  - ADQ Compliant datacollection based on an ADQ compliant Avinor GIS Geodatabase

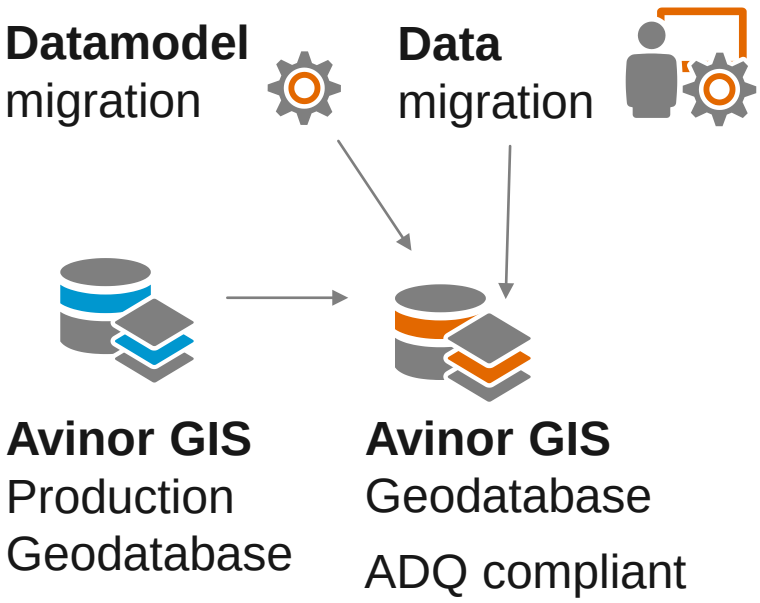
Step 1 – Creation of an ADQ compliant geodatabase

Avinor GIS
Production
Geodatabase

Based on the GAP analysis

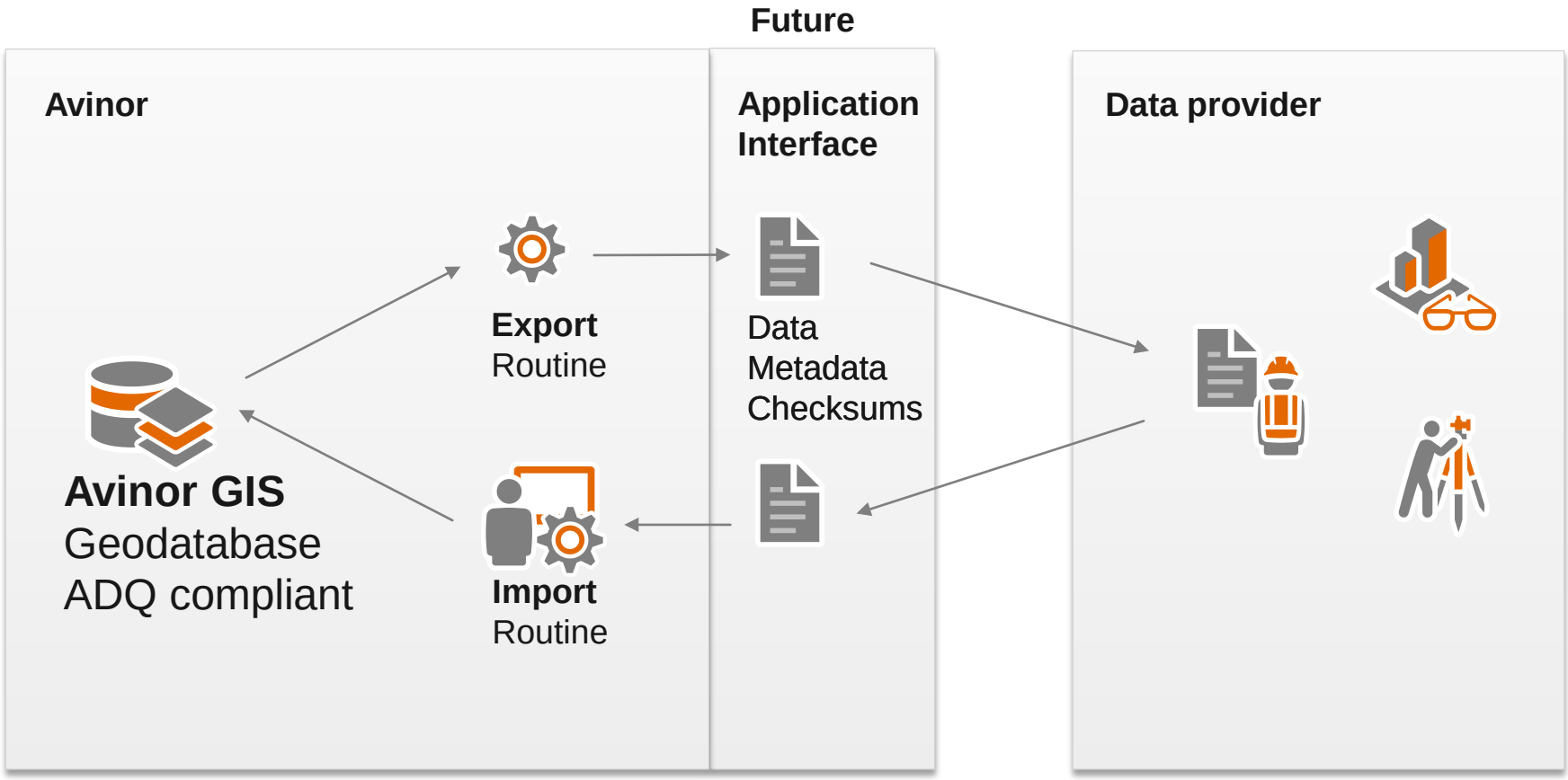
- Changes needed in datamodel to support an AMDB export
- Changes needed to store the required metadata

Step 1 – Creation of an ADQ compliant geodatabase



- Develope and test datamodel migration tool
- Identify methods needed migrate data
- Identify the approximate workhours needed to migrate data for a given airport

Step 2 – Defined a concept for data exchange



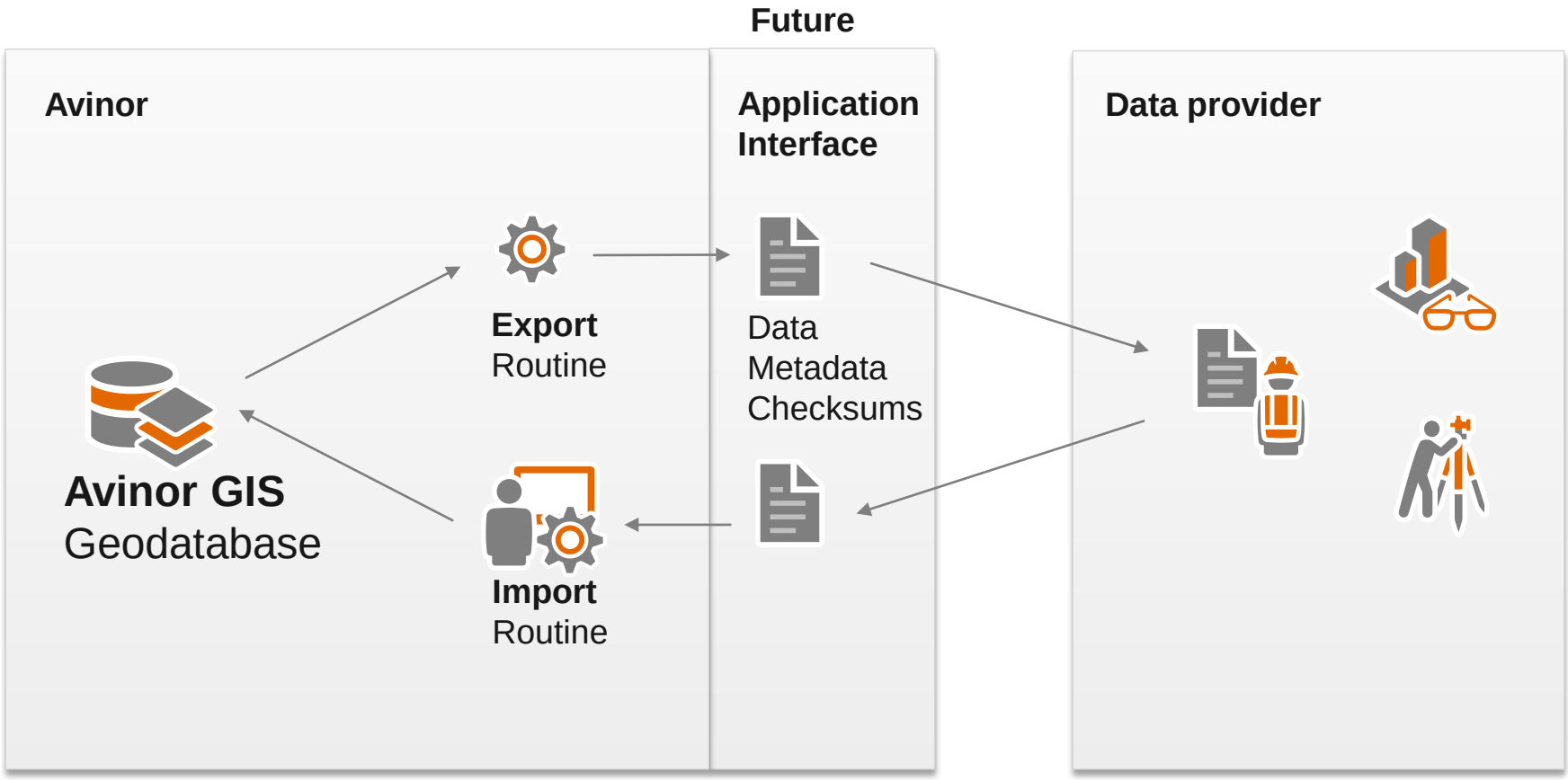
Step 3 – Updated collection instructions

- SOSI – Norwegian specification and format for collecting and storing geographical data
  - The specifications is devided into seperate parts based on branch. Aviation has its own part describing how to collect and store airport data
- Adjusted the SOSI aviation part
  - Object model adjusted
  - Collection instructions adjusted
- Survey based on existing data and an adjusted collection instructions
  - Complete survey
  - Collect missing data and metadata to meet ADQ/AMDN requirements
  - Verify existing data

Data Assurance Levels

- EUROCONTROL Specification for Data Assurance Levels
  - Quality management, data exchange, data protection etc.
  - Workshops for enterpreting and discussing ways to adress the requirements
  - Datasets in Avinor GIS currently catogized as DAL 3 - Routine

Status


Future
Avinor
Application Interface
Data provider
Export
Routine
Data
Metadata
Checksums
Avinor GIS
Geodatabase
Import
Routine