



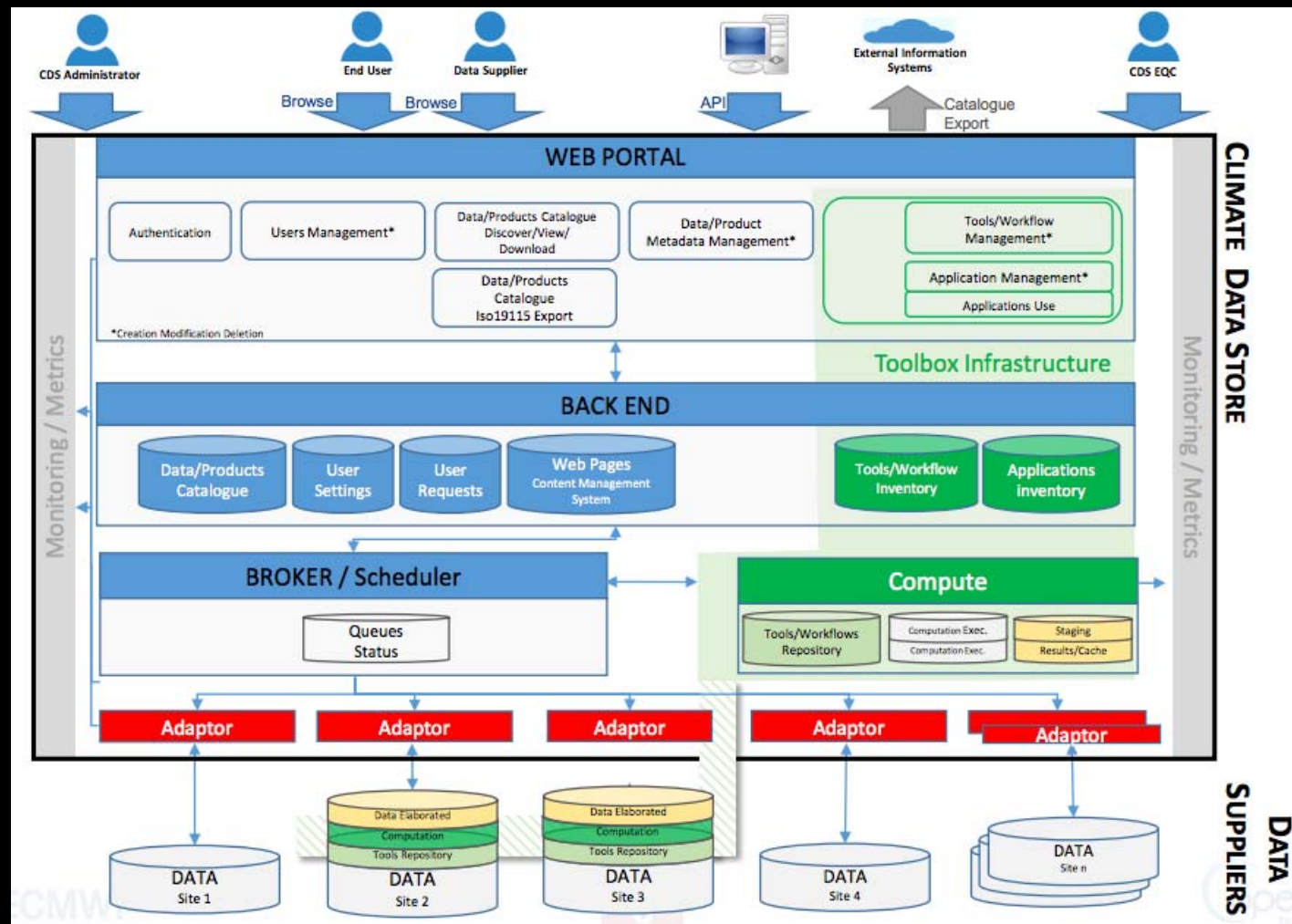
INSPIRE in CDS

INSPIRE compliance in Climate Data Store (CDS)





CDS Architecture





INSPIRE Compatibility

Meta data

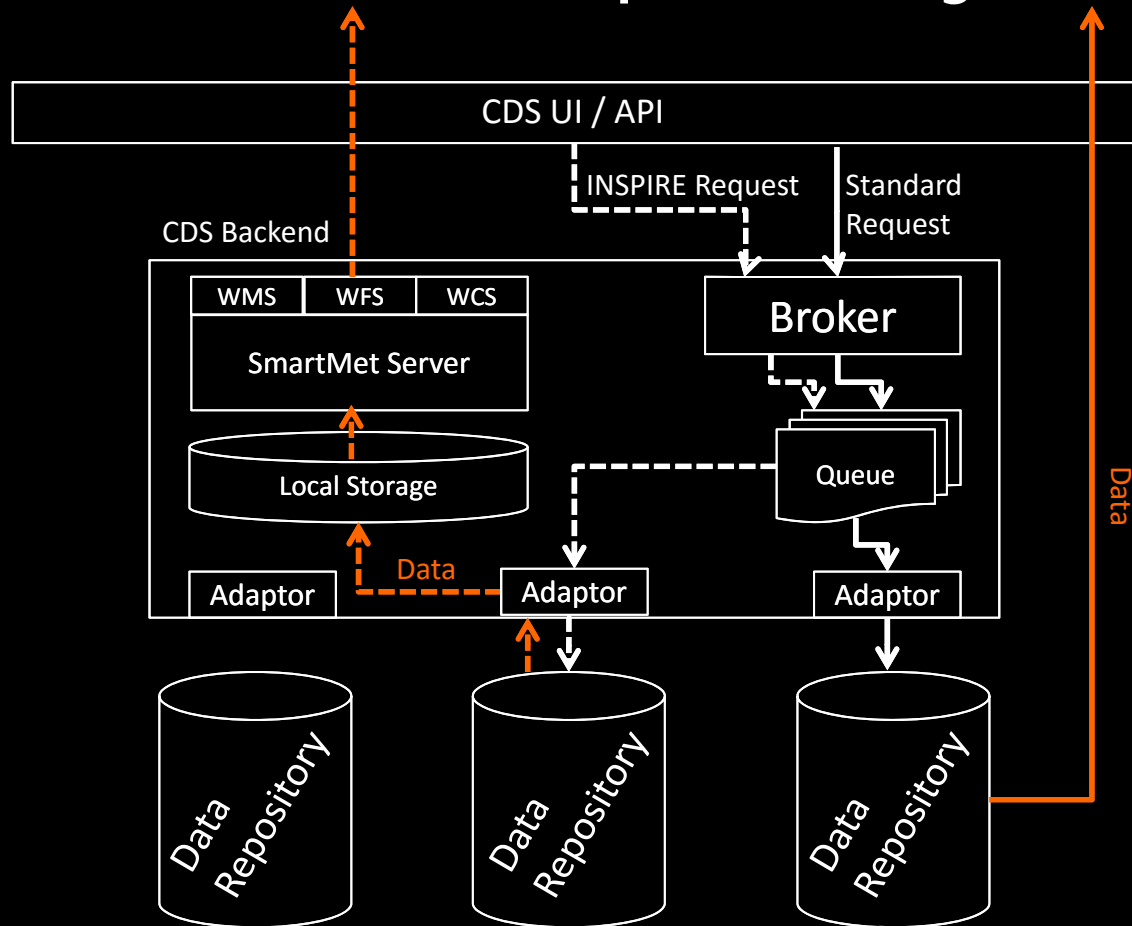
Data
Models

Services

- What does INSPIRE compatibility mean in practice?
 - Data and metadata should be available via W(x)S
 - Metadata should be published in ISO 19115 via CSW
 - User should be able to download data in a specific format
 - User should be able to visualize data via WMS



INSPIRE Compatibility



- CDS returns users only URL to download the data from its original source whenever it's possible
- Very few data repositories support for INSPIRE though
- In case of INSPIRE requests, data has to be downloaded to CDS Local Storage to provide INSPIRE services and data models



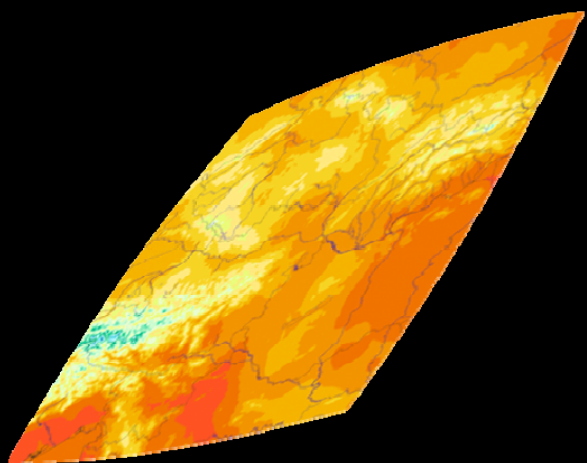
Catalog Service



- GeoNetwork is used
 - Widely used and supported open source software
 - Provides both UI and CSW machine readable interface
 - <http://geonetwork-opensource.org/>
- CDS web portal provides an UI
 - Data sets can also be synced to INSPIRE geoportal
 - Metadata has to be synced between UI (Drupal) and GeoNetwork
- How to define data set?
 - How to ensure that data sets are not duplicated from original source?



View Service



- SmartMet Server WMS
 - <https://github.com/fmidev/smartmet-server>
- Generates WMS images directly from data on-demand
 - No need to pre-generate images
- Generic style has to be used
 - Creating bespoke styles for all layers is not realistic
 - Instead few generic styles has to be generated



Download Service

- All data sets are in data theme 12 (AC-MF)
 - Possible data spatial object types:
Grid Observation, Grid Series Observation, Point Observation, Point Observation Collection, Multi Point Observation, Point Time Series Observation, Profile Observation, Trajectory Observation
 - Data models are not very convenient for large grid data
 - No need to follow INSPIRE grids
 - Data in projection EPSG: 4258
- Provides data both as point data and binary grid
 - Point data isn't necessary but provided for users' convenience
- SmartMet Server WFS
 - <https://github.com/fmidev/smartmet-server>
 - Based on stored queries (pre-defined data sets)





Download Service

- Point data requests
 - Data can be fetched from any point (lat,lon)
 - Data is interpolated to the accurate location
 - Possible data formats: *Grid Series Observation, Point Time Series Observation, Simple Feature*
- Binary data
 - For full data sets, binary data is the only convenient possibility
 - In those cases WFS answer will contain necessary metadata with a link to the actual data
 - Actual data is provided via SmartMet Server Download Plugin to support necessary trimming, slicing and rejections
 - WCS will replace this in the future
- GetDataSetById
 - Special WFS stored query for fetching data sets with INSPIRE ID





Download Service



- SmartMet Server TimeSeries
 - <https://github.com/fmidev/smartmet-server>
 - Non INSPIRE compliant API for point data requests
- Point data requests
 - Data can be fetched from any point (lat,lon)
 - Data is interpolated to the accurate location
 - Possible data formats: *csv, json, xml, ascii, html*
- Aggregation support
 - *avg, max, min...*



Download Service



- Web Coverage Service (WCS)
 - INSPIRE WCS Profile is work in progress
 - SmartMet Server WCS interface is under development
 - Enables 'direct' standard way to download binary data
 - CDS development will follow WCS development and use it if possible



Thank you

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