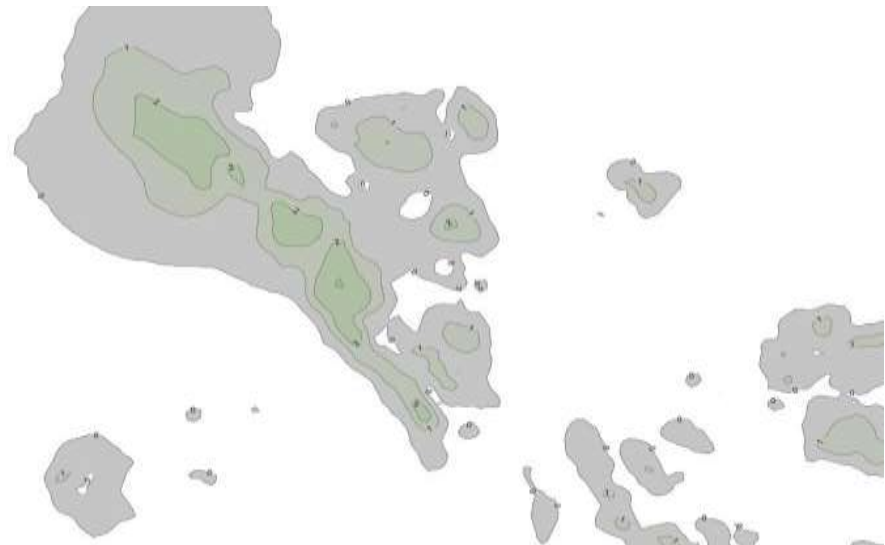


SMHI: Presentation of map services / Product Portal / Polopoly

**Met Office,
GIS/OGC Standards in Meteorology
2010-11-14 → 2010-11-17**

Agenda

- Map Service
 - Directives
 - Goals
 - On-Demand
 - What is Map Service
 - Architecture
 - Future
- Product Portal
- Smhi.se



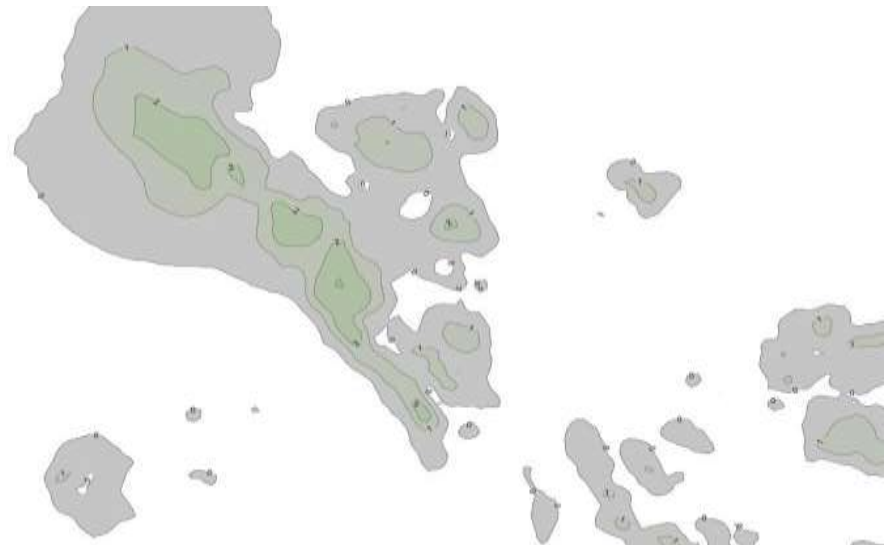
Directives

- "Webb i framkant"
- Meeting INSPIRE demands
- Meeting national demands – Swedish geographical data portal, planning portal etc.
- A first action to catch up with the rapid development of the web applications and web services
- Other governments applications want to use services to get the data we host
- Following the global standards makes things easier
- Set up image/map deliveries for the new version of our website
- Media customers have tougher demands for better weather/water/forecast/warning visualizations and applications.
- Easier distribution of data and maps internally
- Easier distribution of satellite and radar images to all our customers
- Possibility of combining layers to create new products easily



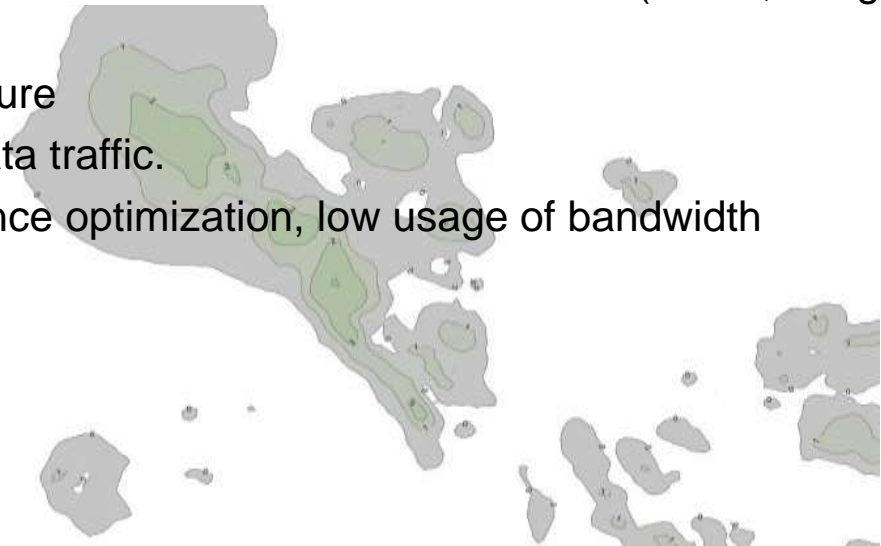
Goals

- Create an infrastructure in order to make data visualising simple. To achieve this goal:
 - OGCs standards shall be used as much as possible
 - Systems providing data shall use this way of publishing and distribution of images, data and services
- To provide a easy access to common existing maps for new web applications



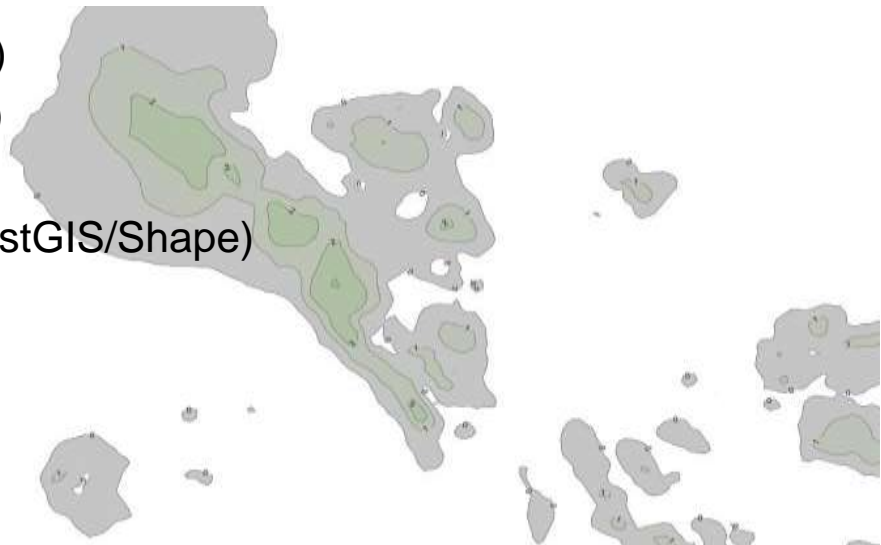
On-demand

- Avoiding production of data that is never used
- Better use of servers resources.
- Increased flexibility when creating new products for customers
- Meet the new needs of external customers:
 - Services hosted and managed by SMHI ("ready to use" weather applications)
 - On-demand requests (customers own weather applications)
- Requirements on our production to be able to deliver on-demand. (Frodo, Image and map service)
- New requirements on infrastructure
- Quality of Service, prioritizing data traffic.
- Scalable applications, performance optimization, low usage of bandwidth



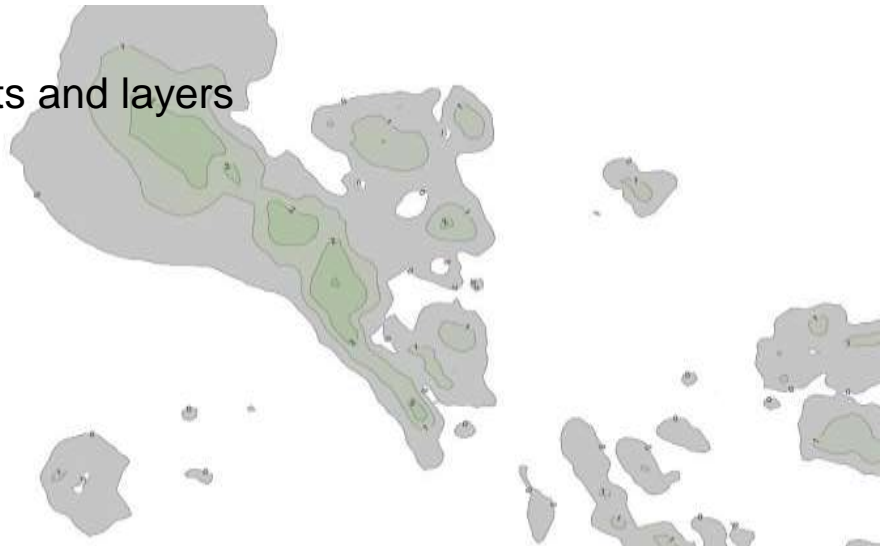
What is Map Services?

- A common service to deliver internally at SMHI and externally
 - Satellite images
 - Forecast images
 - Observations images
 - Radar images
 - Maps
- Data visualisation (iso-lines, iso-surfaces, symbols, ...)
- Data sources
 - Meteorological fields (GRIB)
 - Observation data (real time)
 - Archive data (PostgreSQL)
 - GIS-layers (PostgreSQL/PostGIS/Shape)
 - Satellite images (HDF5)
 - Radar images (HDF5)

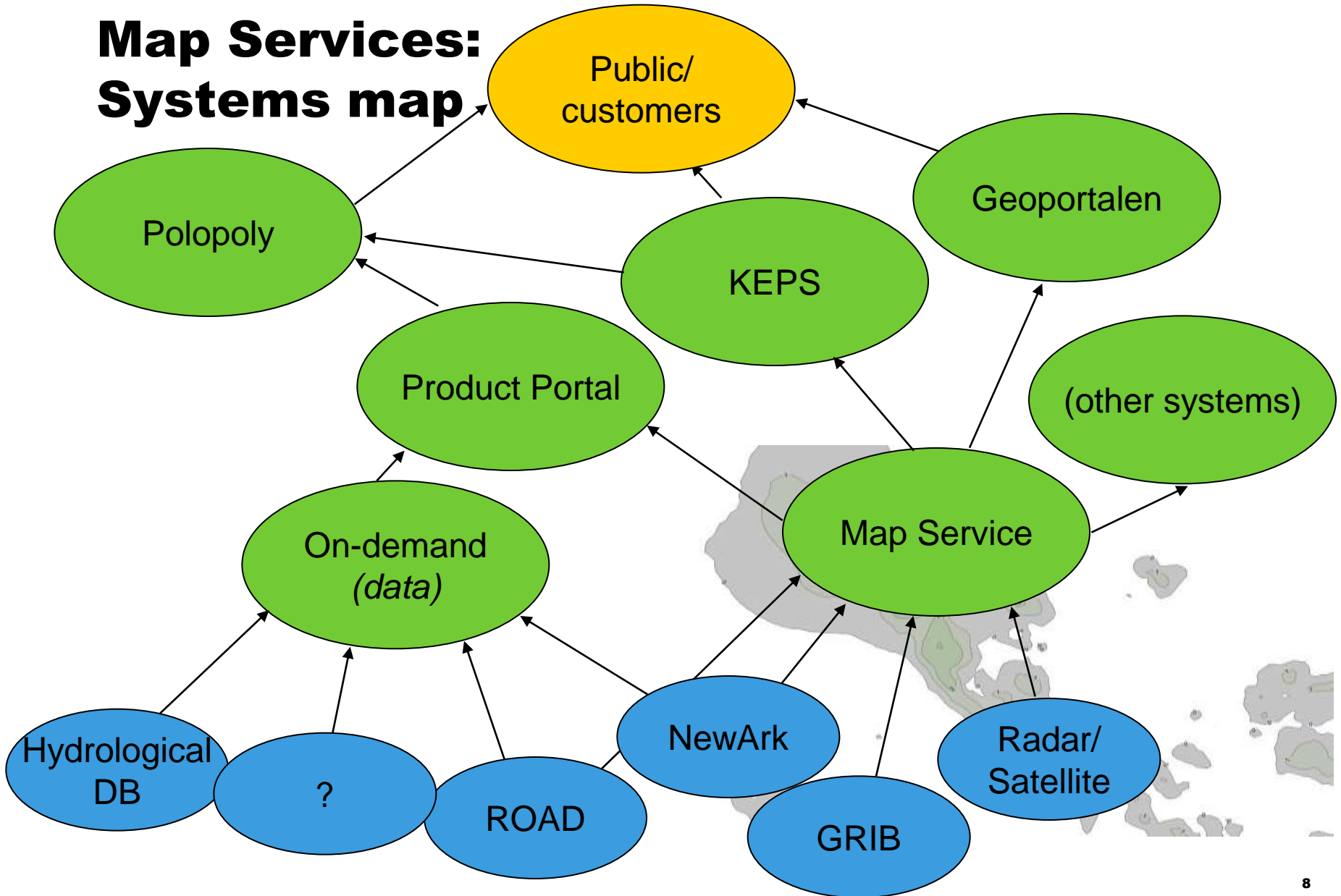


What is Map Services? (2)

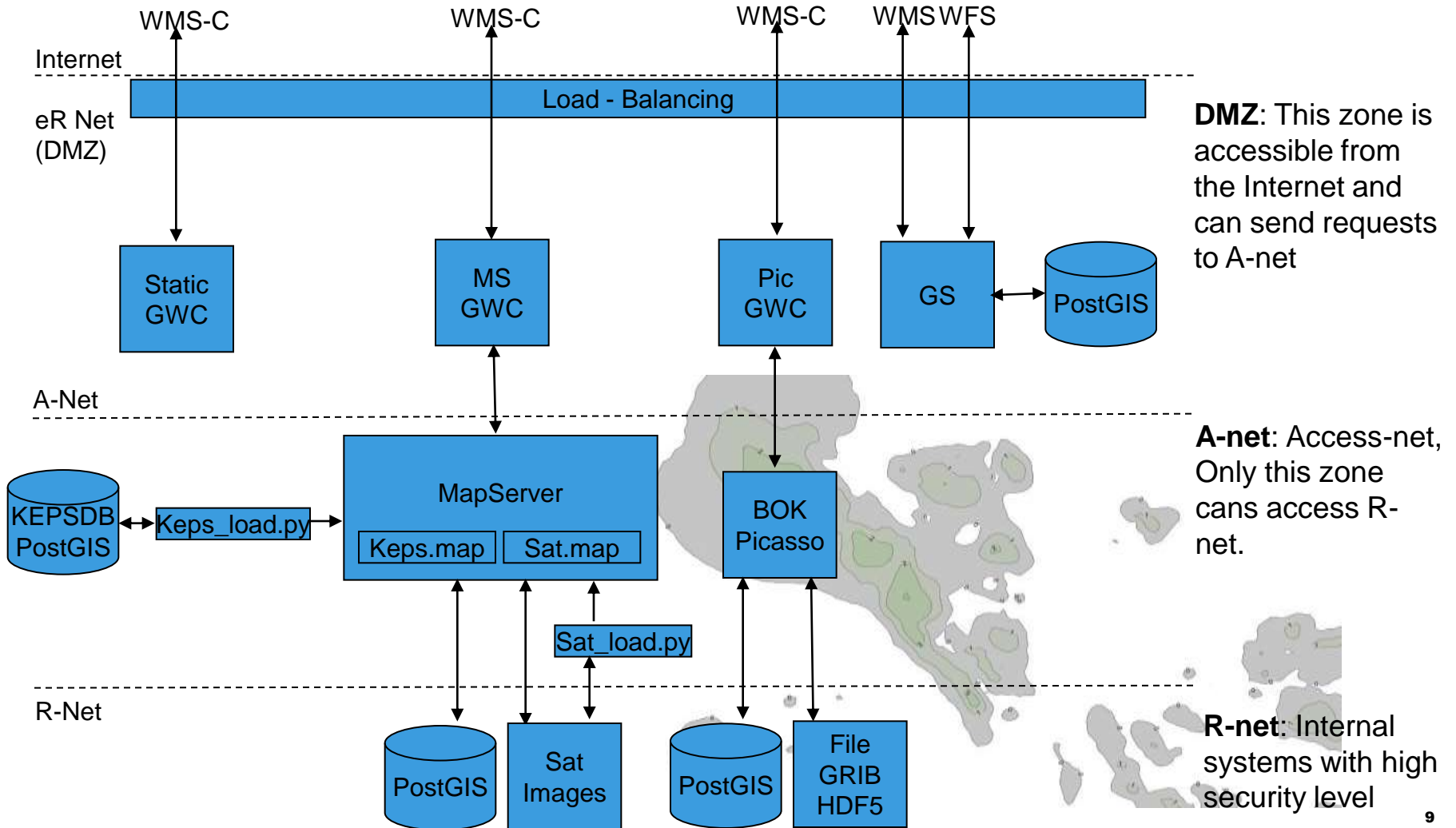
- Authentication
 - Basic authorization – access to services (SMHI domain)
 - Later we will implement an access control with authorization connected to our central LDAP-directory. This way external users will be allowed to use our services in a controlled manner
- Technical support
- Processes for managing Map Services components
 - New developments
 - Maintenance
- Processes for managing products and layers
- Technical veil



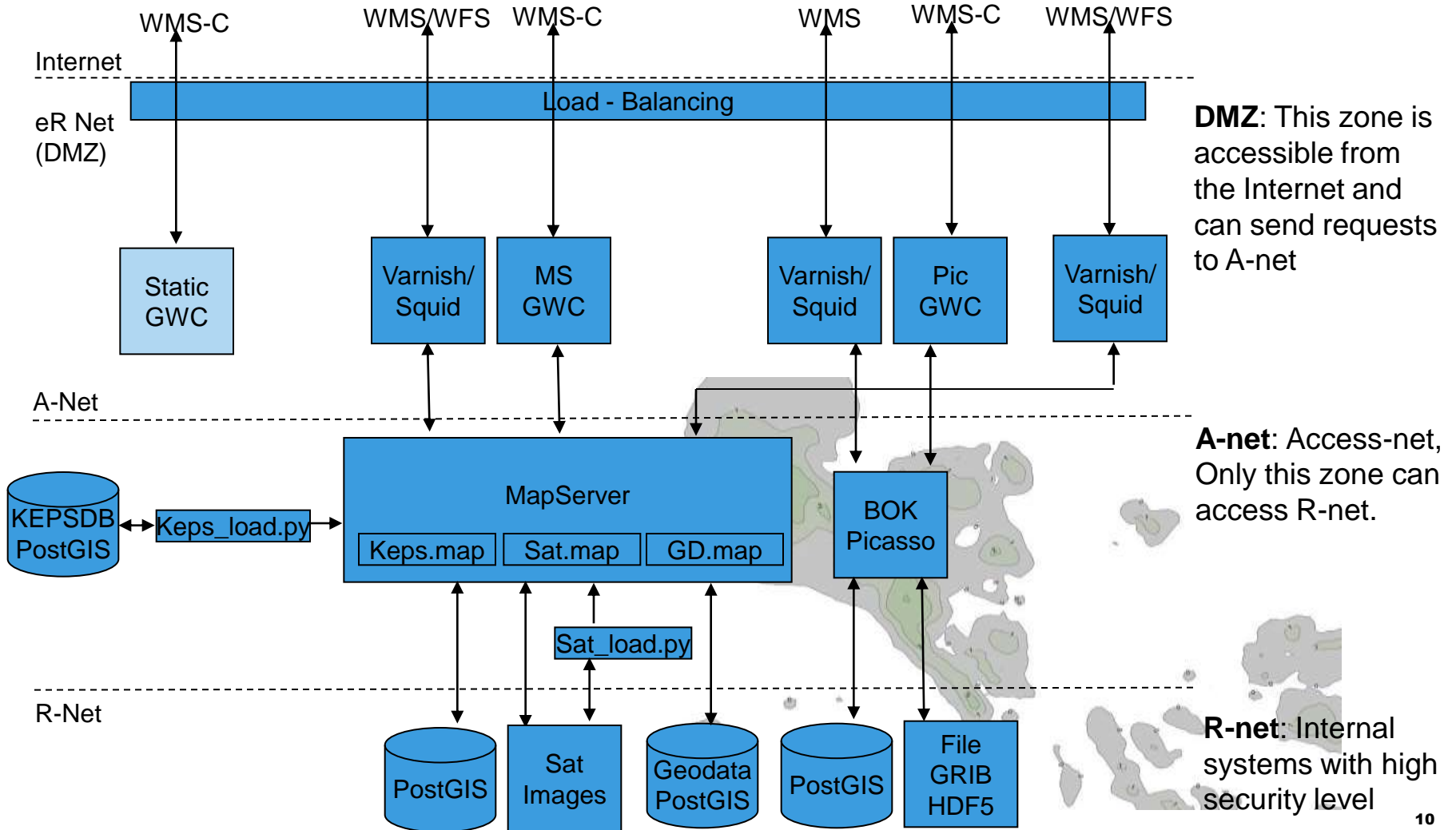
Map Services: Systems map



Map Service: Architecture

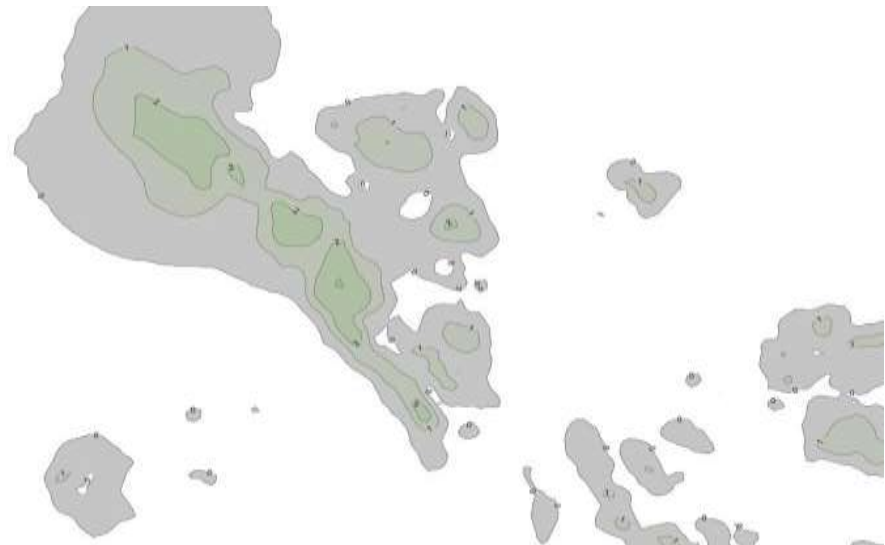
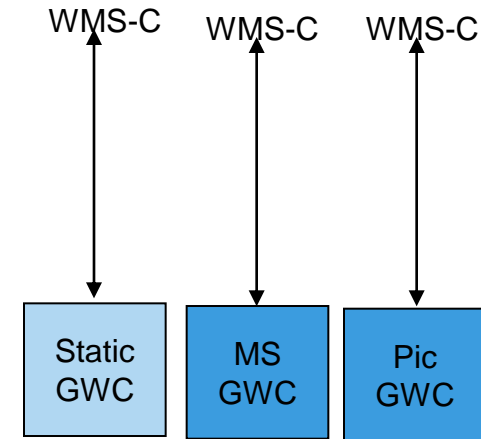


Map Service: Future Architecture



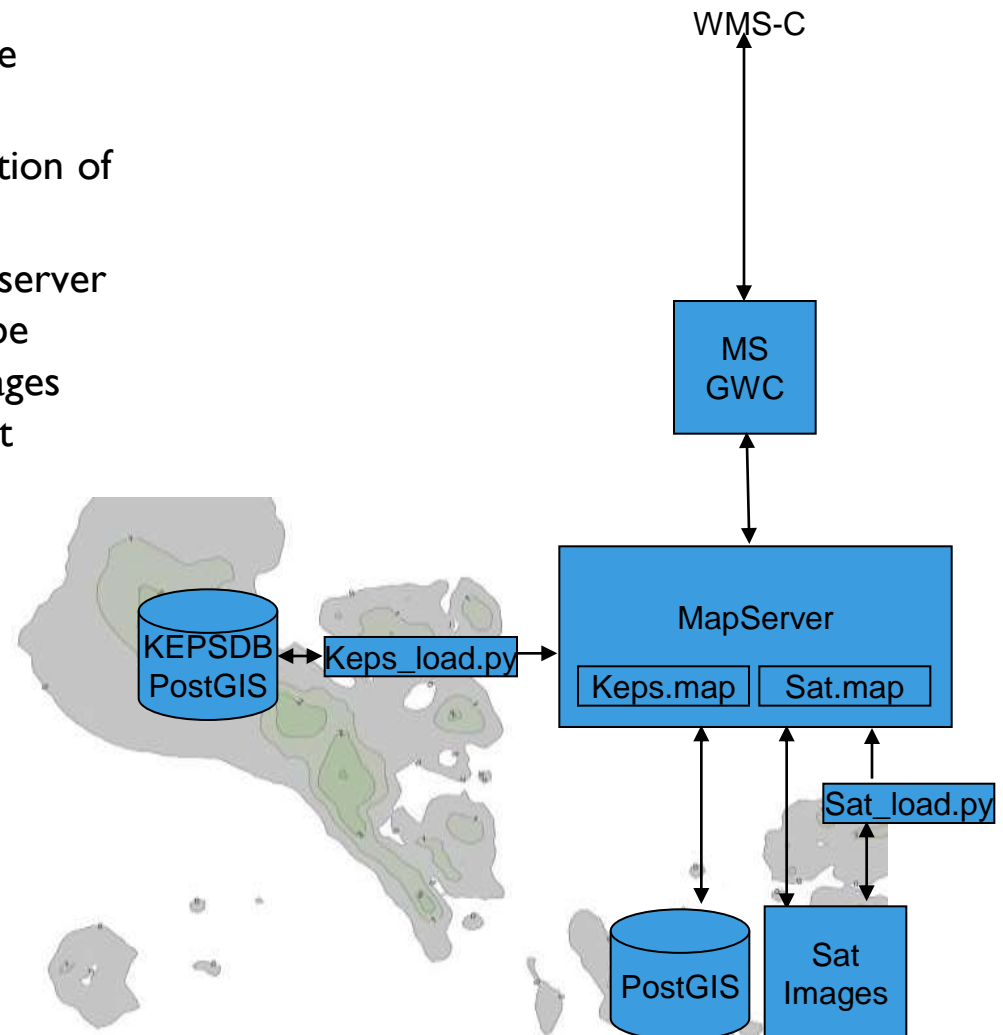
Map Service: GeoWebCache

- GeoWebCache: different caching for different WMS sources:
 - Static
 - MapServer
 - Picasso



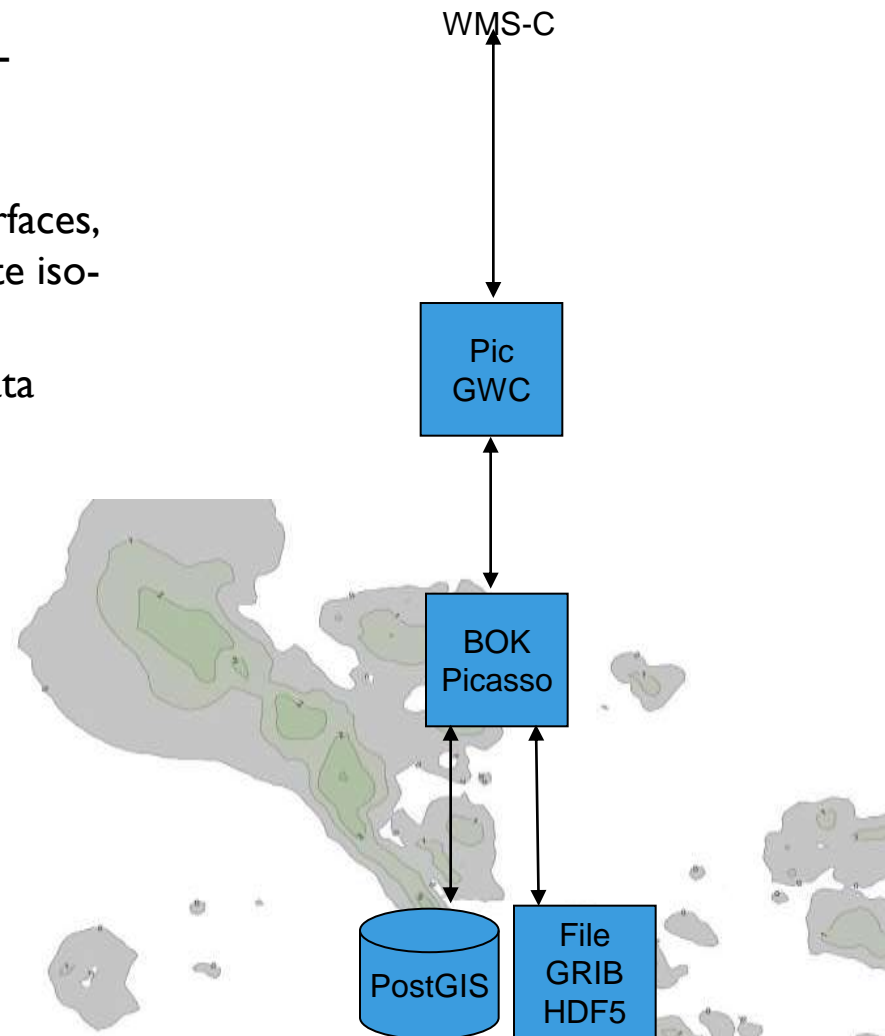
Map Service: MapServer

- Mapserver: WMS-server to provide access for satellite images
 - Manages automated configuration of layers for satellite images
 - Planned to be replaced by Geoserver and its REST-api when it will be verified and when satellite images will be defined in WKT format instead of proj4-strings



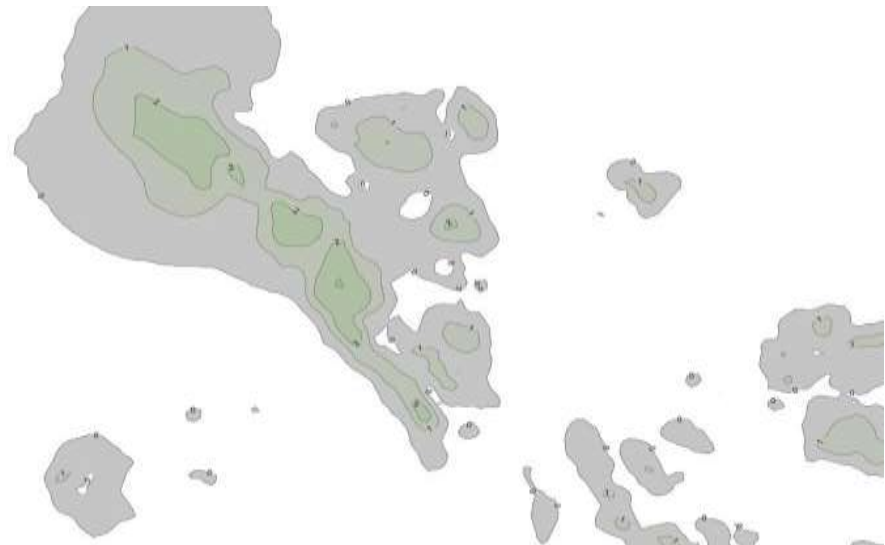
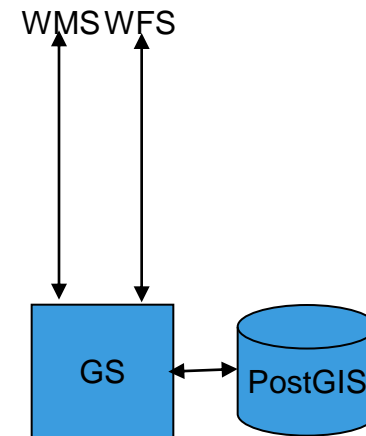
Map Service: Picasso

- Picasso with WMS-front (no batch-production)
 - Is able to perform some data processing as, for example surfaces, compute average values, create iso-lines, draw wind signs, etc.
 - Create images of visualised data according scheduled runs.



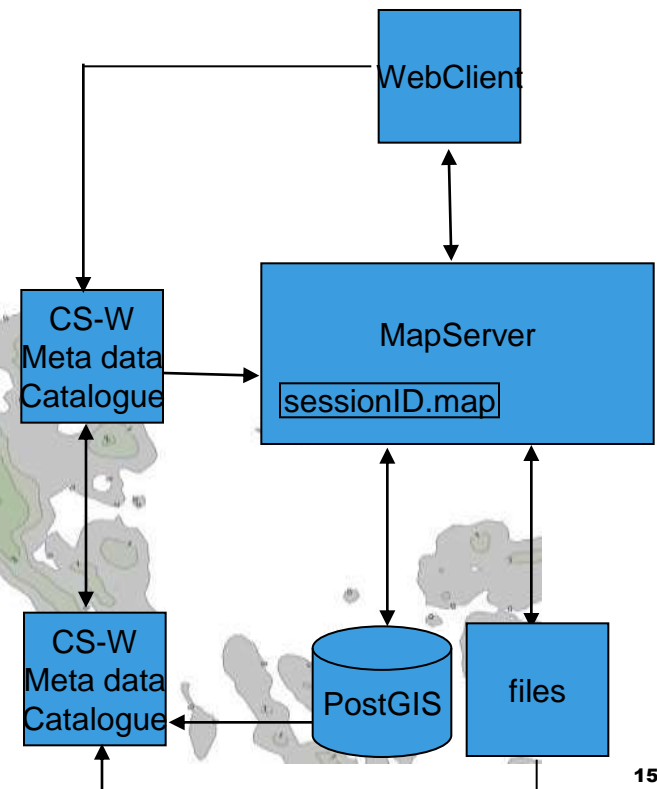
Map Service: GeoServer

- GeoServer: WMS-server getting data from a PG database
 - Map.smhi.se
 - GeoData portal



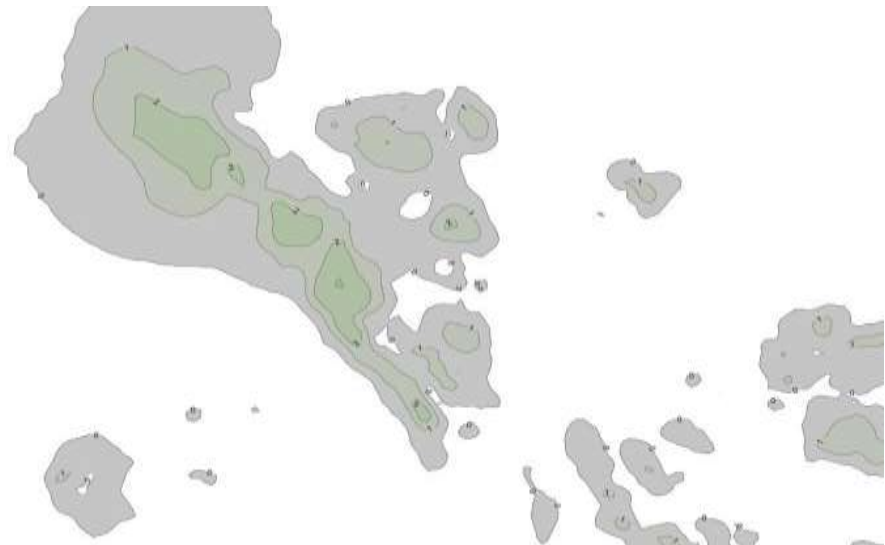
Problems and solutions

- Load problems on WMS Servers:
 - Static Cache
- Time management in GeoWebCache
 - Own development: Sent back to OGC but refused
- Cache management:
 - Separated caches
- Archive Data
 - Quick and dirty: generating images for OpenLayers to access
 - Longterm solution: under development: session based map files
 - 1 Creating a temporary session in and creating a session map in MapServer with Meta data
 - 2 Mapping the Map file
 - 3 when session ends, map file is removed



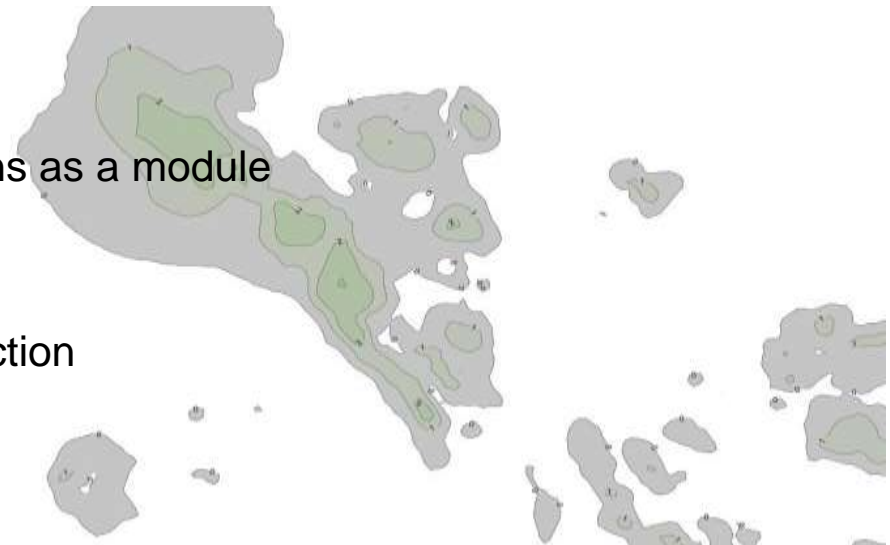
Demo

- <http://bokartbuild.a001266.pers-utv2.smhi.se/>
- <http://bokartutv.a001266.pers-utv2.smhi.se/>
- <http://wts-utv.smhi.se/geowebcache-pic/demo>
- <http://wts-tst.smhi.se/geowebcache-pic/demo>
- <http://wts.smhi.se/geowebcache-pic/demo>



Map Service: 2011

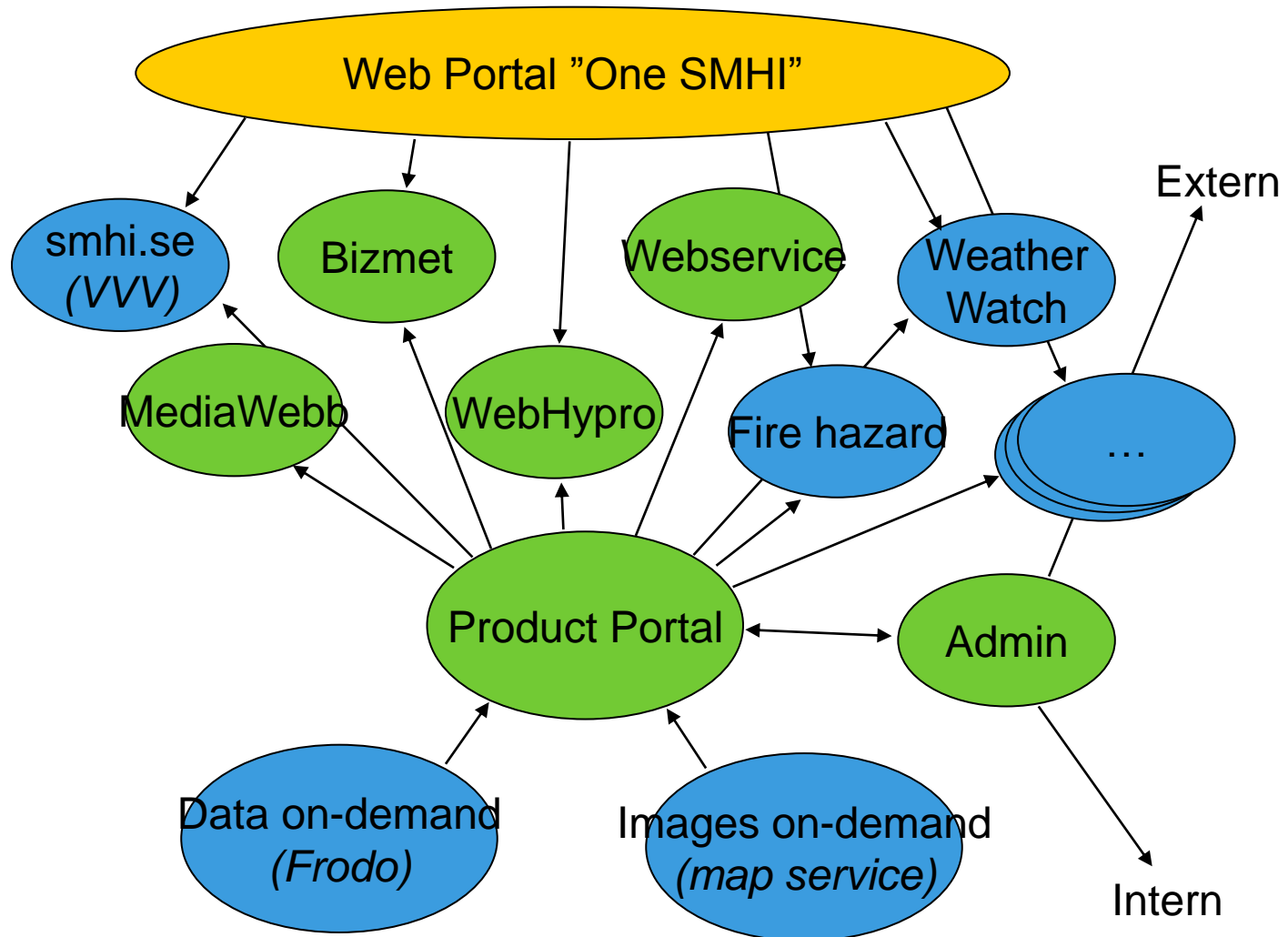
- Challenges:
 - Continue development
 - Following technical development of GIS
 - "New" team, secure and share knowledge
 - Requirement management: many users/customers
- Futures functions
 - Performance optimisation
 - Rationalisation and refactoring
 - Meta data Management
 - Iso-lines and other drawing functions as a module
 - Mobility
 - Cloud computing (caching)
 - Faster process: from idea to production



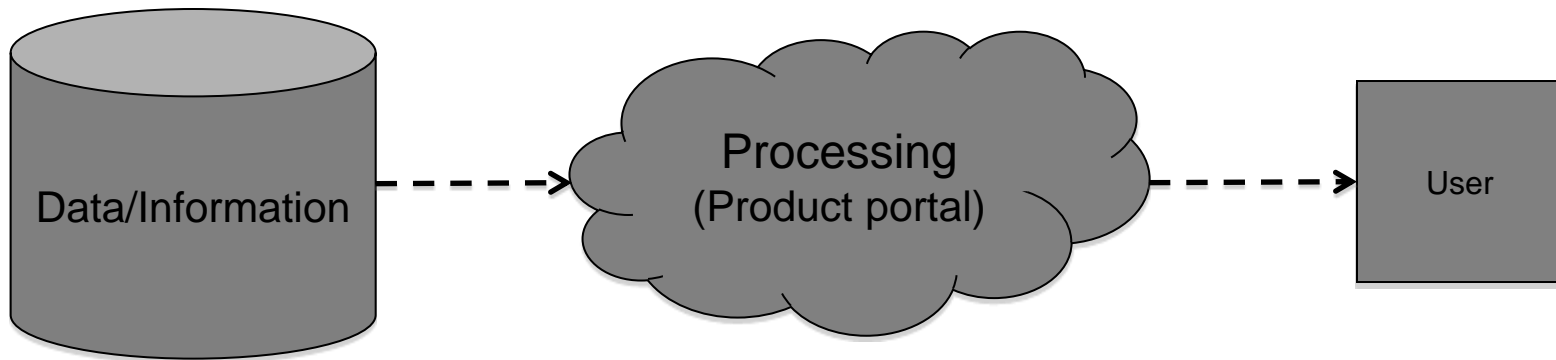
Product Portal

- Combines and presents data from different sources in ready-to-use products
- API towards on-demand production systems
- Delivers web based services for:
 - Web
 - Mobile services
 - Scheduled deliveries (Ftp, Mail, SMS, Fax etc.)
 - Web services
- Module based
- Uses PostGIS geographical data management
- Based on Ajax and Open Layers
- Scalable architecture
- Differs content and layout
 - Enables fast and simple adaptation to different client types
 - Customer's layout
- Security, Authentication and rights and access management
- Administration tools for internal & external configuration

Product Portal



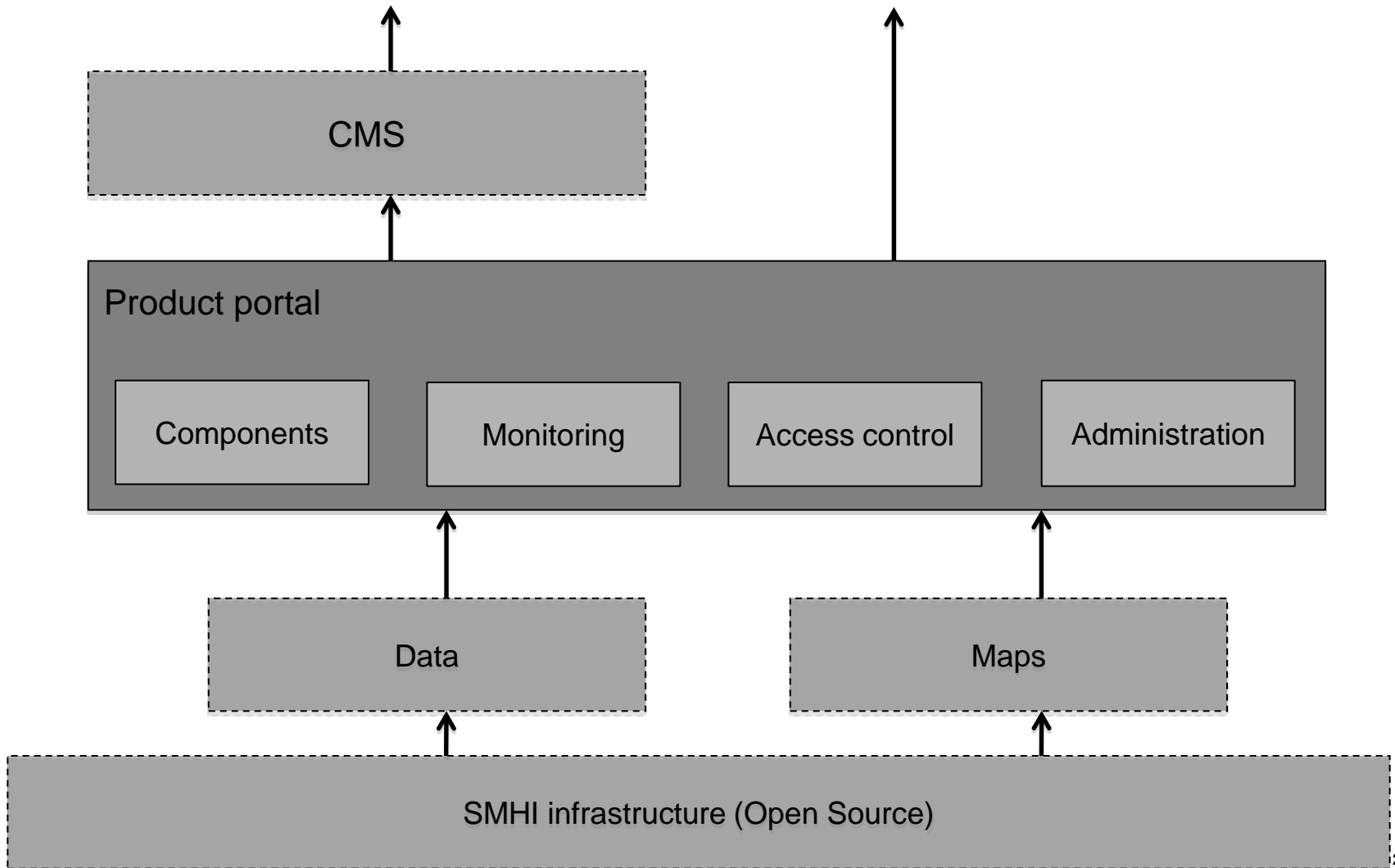
Product Portal: concept



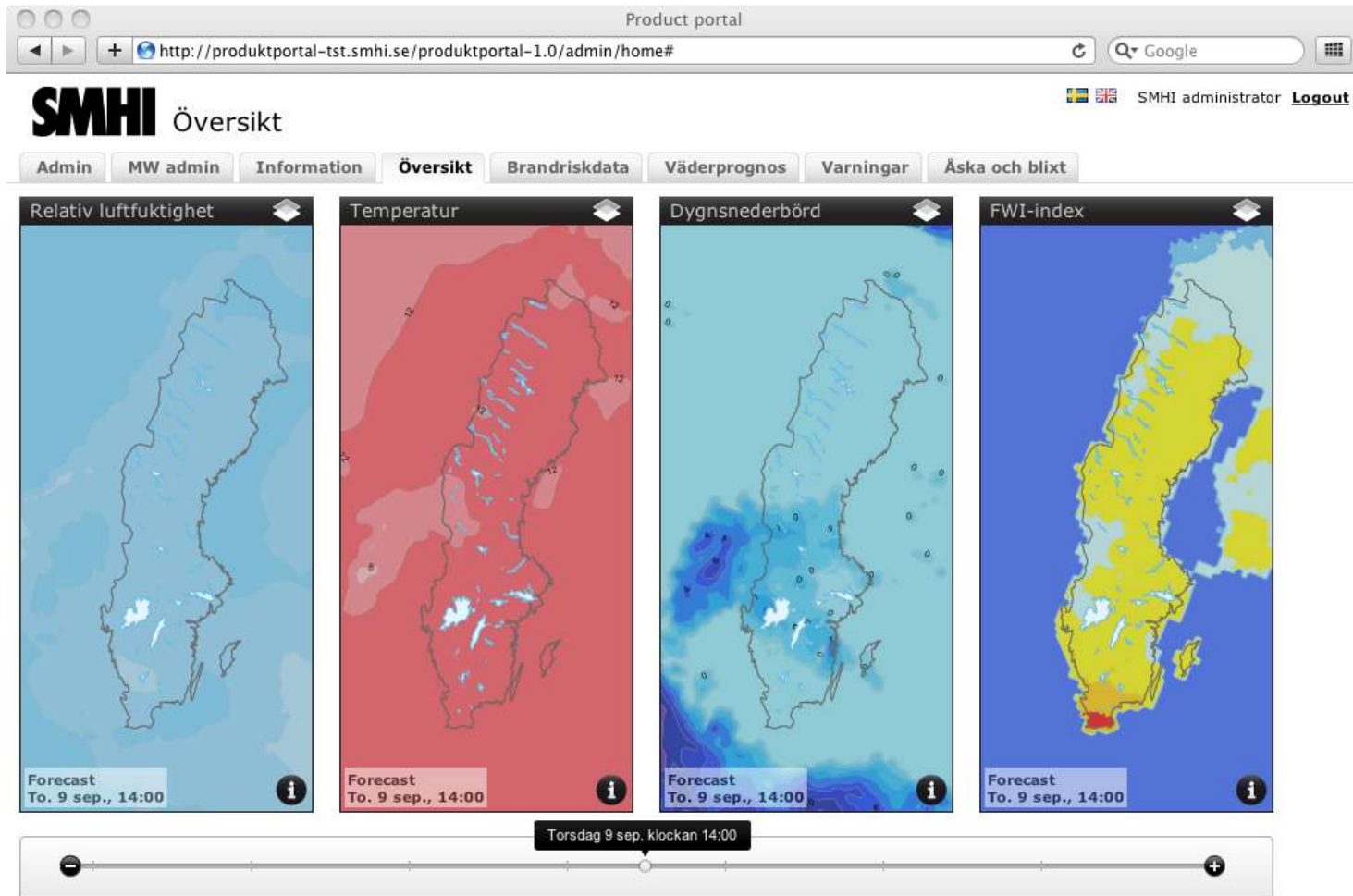
Important aspects:

- On-Demand
- Re-use
- Availability

Product Portal: Structure



Product Portal



Product Portal

Product portal

http://produktportal-tst.smhi.se/produktportal-1.0/admin/home#

SMHI Brandriskdata

SMHI administrator [Logout](#)

Admin MW admin Information Översikt **Brandriskdata** Väderprognos Varningar Åska och blix

Dygnsnederbörd

1550429.62, 7646721.59

Chosen point:

[Time](#) [ISI](#) [FWI](#) [FFMC](#) [BUI](#) [FWI-index](#)

No data point selected. Click on the map to select an area.






Analysis
Må. 6 sep., 14:00

Måndag 6 sep. klockan 14:00


Product Portal: Administration

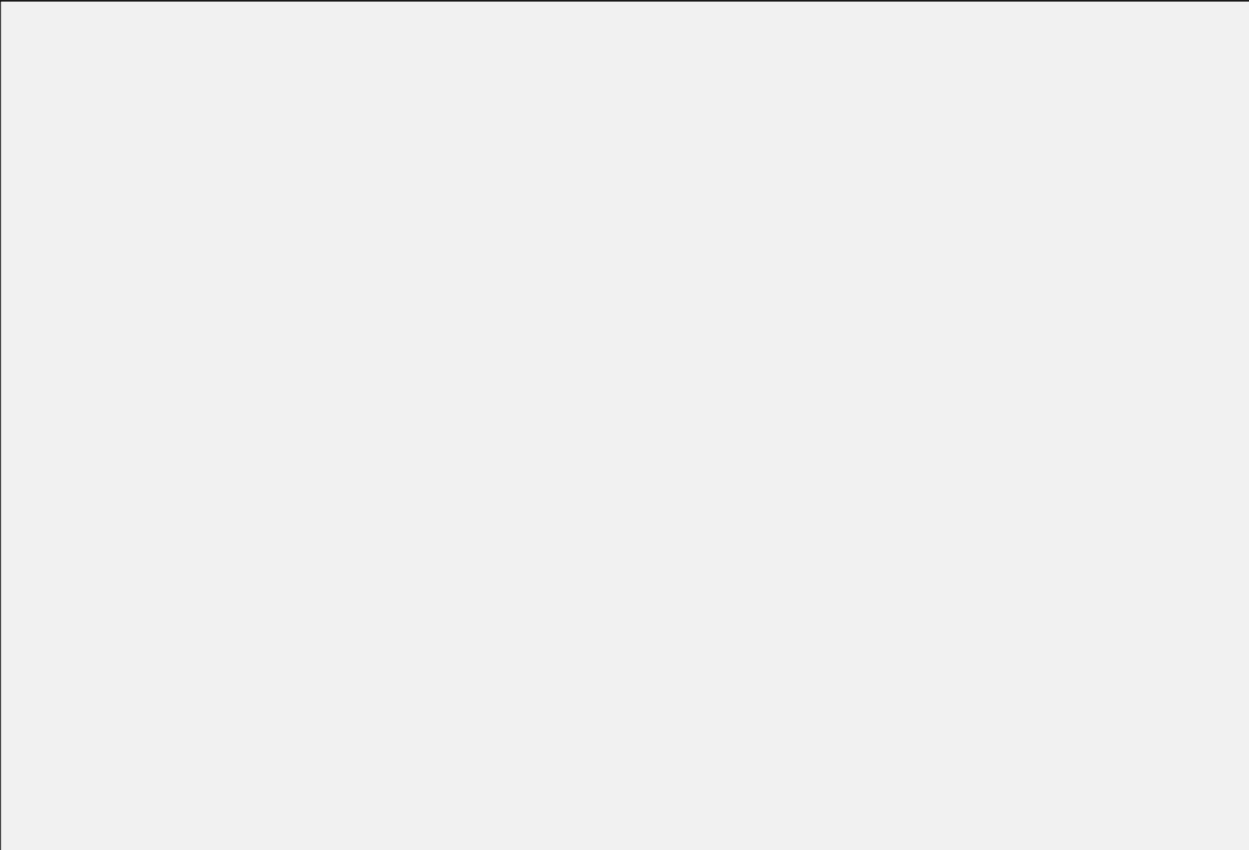
Verktyspanel
Drag objekt till ytan till höger för att komponera ett paket.

Layouter

- 
Layout 1
- 
Bygg Layout
- 
Snöras Layout
- 
Brandrisk layout
- 






Titel:

Beskrivning: Logo: 




Product Portal: Administration

Moduler


- 
Tabellmodul
- 
Textmodul
- 
Kartmodul
- 
Snörasmusmodul
- 
Snörasmusmodul

Titel:

Beskrivning:

Logo:  Myndigheten för samhällsskydd och beredskap

Temperatur



Vald punkt: 571310.1, 6500742.9

Tidpunkt	Weather symbols	Casting coverage	Casting no coverage	Painting north
2010-10-16 02:00				
2010-10-16 03:00				
2010-10-16 04:00				
2010-10-16 05:00				

Ingen prognostext tillgänglig

Lö. 16 okt., 16:00


Lördag 16 okt. klockan 16:00

Product Portal: Administration

Moduler

Titel: Byggväder

Beskrivning:

Logo:  Myndigheten för samhällsskydd och beredskap

Välj...

Spara paketet

Kartmodul PRO inställningar

Kartlager

Titel

Avancerat

+ Lägg till - Ta bort Editera tider

Lager	Inställningar	Underst	Flytta
<ul style="list-style-type: none"> Grundkarta <ul style="list-style-type: none"> Väderöverlag <ul style="list-style-type: none"> Radar Temperatur Låga moln Medelhöga moln <ul style="list-style-type: none"> Nederbörd <ul style="list-style-type: none"> Nederbörd 1h 	Grundkarta EPSG:900913 Lagret är inte förvalt från början Lagret är förvalt från början Lagret är inte förvalt från början Lagret är inte förvalt från början Välj lager i en rullgardinlista Lagret är inte förvalt från början	 <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

OK Avbryt

Product Portal: Administration

Myndigheten för samhällsskydd och beredskap

SMHI Byggväder

[Pptsadm](#) [Pptsadm](#) [L](#)

Admin

MW admin

Information

Översikt

Byggväder

Fjällväder

Snöras

Brandriskdata

Temperatur

Vald punkt: 571310.1, 6500742.9

Tidpunkt	Weather symbols	Casting coverage	Casting no coverage	Painting north	Painting west	Painting south	Painting east	Crane lifting form
2010-10-16 02:00								
2010-10-16 03:00								
2010-10-16 04:00								
2010-10-16 05:00								

Ingen prognostext tillgänglig

Smhi.se

The screenshot shows the SMHI website homepage. At the top, there is a navigation menu with links for VÄDRET, KLIMATDATA, PRODUKTER OCH TJÄNSTER, KUNSKAPSBANKEN, FORSKNING, OM SMHI, and KONTAKT. Below the menu is an 'Översikt' (Overview) section featuring a map of Sweden with weather icons for various cities like Helsingfors, Åbo, Umeå, Uppsala, Örebro, Göteborg, Stockholm, Malmö, and Helsing. To the right of the map is a text box titled 'HÖSTEN ÄR PÅ VÄG FRÅN NÖRRE MEN DET BLIR YTTRELLIGARE NÅGRA SENSOMMARDAGAR I SÖDER.' followed by a paragraph about autumn weather and a 'Visa hela' link. Further right is a 'Folkets väder' section with a small map and text about a weather forecast. Below that is a 'Följ regn med radarbilder' section with a radar image and text about rain forecasts. At the bottom right is a 'Biltväder' section with a car image and text about weather services for cars. The main content area on the left contains an 'AKTUELLT' (Current) section with three news items: 'SMHI medverkar på Nordiskt Havsforskningsmöte', 'Meteorologen Bengt Lindström får europeiskt pris', and 'Nya klimatberäkningar visar på mer extremt väder'. On the right side, there is a 'TEMA: Havsmiljö' section with a sunset image and text about marine environment, and a 'Klimat i förändring' section with text about climate change. At the bottom right, there is a 'KUNSKAPSBANKEN' section with a 'Höstlagjämning' article featuring a tomato image.