

# NinJo – System Overview and Usage for Aviation Meteorology at DWD

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## Abstract

The meteorological workstation NinJo as result of an international software development project is presented. The NinJo project had been presented during previous workshops on operational systems. Since then NinJo has been operationally introduced at the meteorological offices of all development partners in Canada( MSC), Denmark (DMI), Germany (DWD and MetBW), and Switzerland (MeteoSwiss). This year’s presentation focuses on the operational status of the system and the NinJo roadmap to the extension of the system in order to support all aspects of operational meteorological work. Recent developments supporting the automatic production of warnings and graphics are briefly outlined. The presentation is completed by the demonstration of the typical workflow at a meteorological office at Frankfurt airport during a particular strong convective situation affecting the air traffic around the Rhein-Main region. The necessary analysis of various data types emphasizes the importance of the observational information in meteorological decision making especially in such a rapidly changing weather situation and hence is tying to “the role of observations” as the main focus of this year’s workshop.

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**NinJo - joint development of meteorological workstation**

- (1) **Improve forecasting processes within the Consortium**
  - Visualization of met Data (OBS, Radar, SAT, NWP,...)
  - Production and Warning processes (IGE, EPM, Batch, OSA, MMO)
  - Delivery of services to the customer
- (2) **Share resources for development and maintenance**
  - Each partner provides resources for development and maintenance
  - Personal and financial resources
- (3) **Licensing of the NinJo-Software**
  - User licensing income for maintenance and further development
  - Licensees profit also from that way of working
  - Licensing information: [ [www.ninjo-workstation.com](http://www.ninjo-workstation.com) ]

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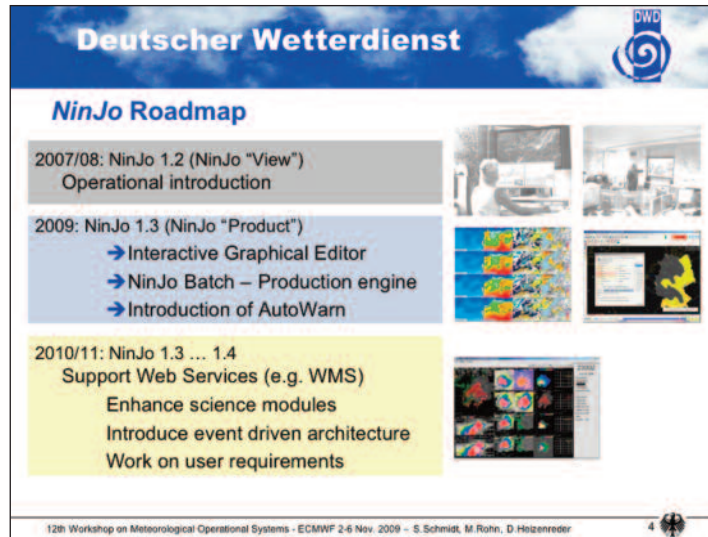
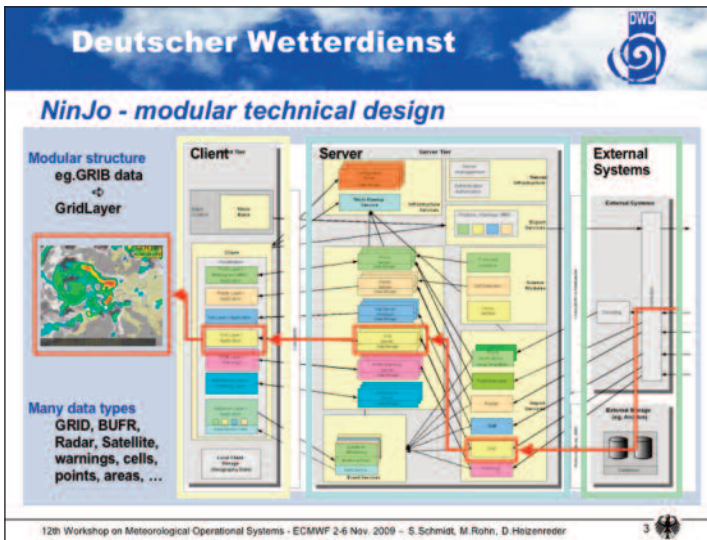
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**NinJo – Operational usage within consortium**

- ... at MSC
  - ☐ 2009: operational parallel with legacy system
  - ☐ replacement of legacy system with NinJo-1.3.4
  - ☐ 134 Clients, 65 Servers
- ... at DMI
  - ☐ operational at all sites since 2007
  - ☐ 14 Clients, 8 Servers
- ... at DWD / MetBW
  - ☐ operational at all sites since 2007
  - ☐ 350 Clients, 90 Servers
- ... at MeteoSuisse
  - ☐ operational at all sites since 2007
  - ☐ 25 Clients, 5 Server

**MET-Office Frankfurt**  
application example for aviation meteorology

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### NinJo - new features : „AutoWARN“

Project **AutoWarn** finished at DWD

- automatic generation of warning status from various data sources (observation, model, MOS-postprocessing )
- support to warning process


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**NinJo - Scheduled Meteorological Product Creation**

**interactive**  
ProductWorkbench  
→ *interactive editing*



since October 2009: operational  
Significant Weather Chart (SWC)


**non-interactive**  
NinJo Batch  
→ *parametrization*



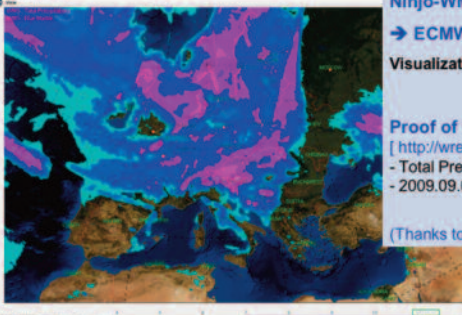
Prototype and testing

Geopotential 500 hPa (gpm)  
Temperatur 850 hPa (°C)  
01. 04. 04. 2009 06 UTC 00 - 1200  
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**NinJo - new features : „WMS Layer“**



**Ninjo-WMS-Layer**  
→ ECMWF-WMS-Server  
Visualization of existing WMS-data

**Proof of Concept with**  
[ <http://wrep.ecmwf.int/wms/> ]  
- Total Precipitation  
- 2009.09.04 – 06:00 UTC  
(Thanks to ECMWF)

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**MET-Office Frankfurt  
Advisory Centre for  
Aviation**

with a view over the  
airfield and the runways





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Forecasters are working in 24/7 shift work  
20 employees

5 workplaces, each with:

- 1 PC / 2 screens
- 1 NinJo PC / 2 screens
- The SWC workplace with 1 additional NinJo PC / 2 screens



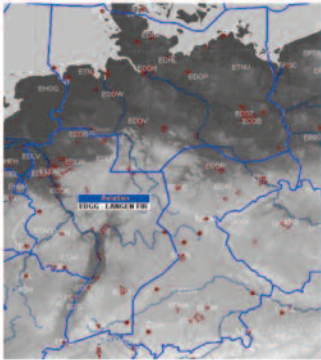
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**Duties and responsibilities of Advisory Centre Frankfurt**

Airspace:

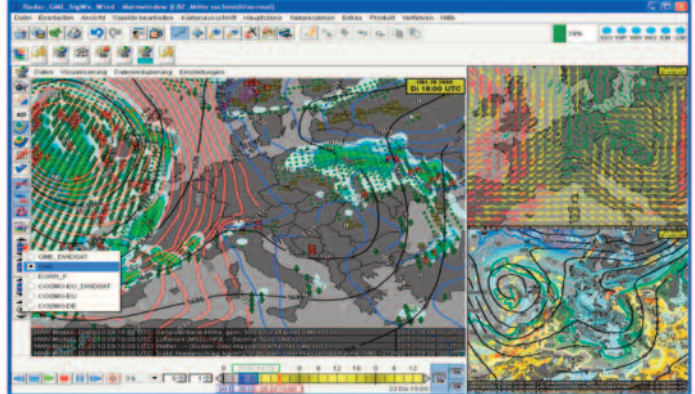
- SIGMET Langen FIR
- SIGMET Rhein UIR
- Significant Weather Chart (SWC)
- GAMET/AIRMET Langen FIR
- GAFOR for SW GERMANY
- Weather reports for Rhein control (Rhein UIR) and German Air Traffic Control



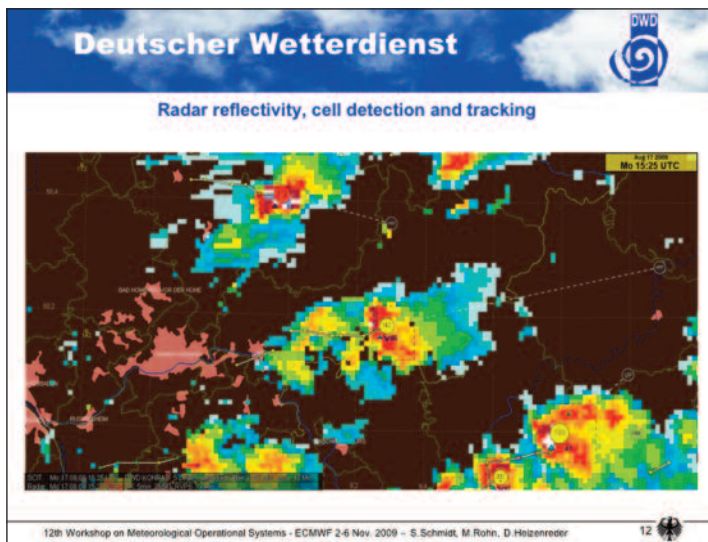
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**Model data at NinJo Mainscene and Secondary Scenes**



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## References

**Rohn M., D. Heizenreder, P. Joe**, 2007, Visualization and Production using NinJo, 11th Workshop on meteorological operational systems, 12-16 November 2007. [[www.ecmwf.int/publications/library/ecpublications/\\_pdf/workshop/2007/MOS\\_11/11-WS-Rohn.pdf](http://www.ecmwf.int/publications/library/ecpublications/_pdf/workshop/2007/MOS_11/11-WS-Rohn.pdf)]

**Reichert B., H.J. Koppert**, 2005, The Meteorological Workstation NinJo and its Production Tools, 10th Workshop on meteorological operational systems, 14-18 November 2005.