ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Weather services for General Aviation in Northern Europe

Collaboration with the Northern Europe Aviation Meteorology Consortium (NAMCON)

19/07/2019 **Jaakko Nuottokari / FMI**

Funding and regulation for GA weather services by designated providers

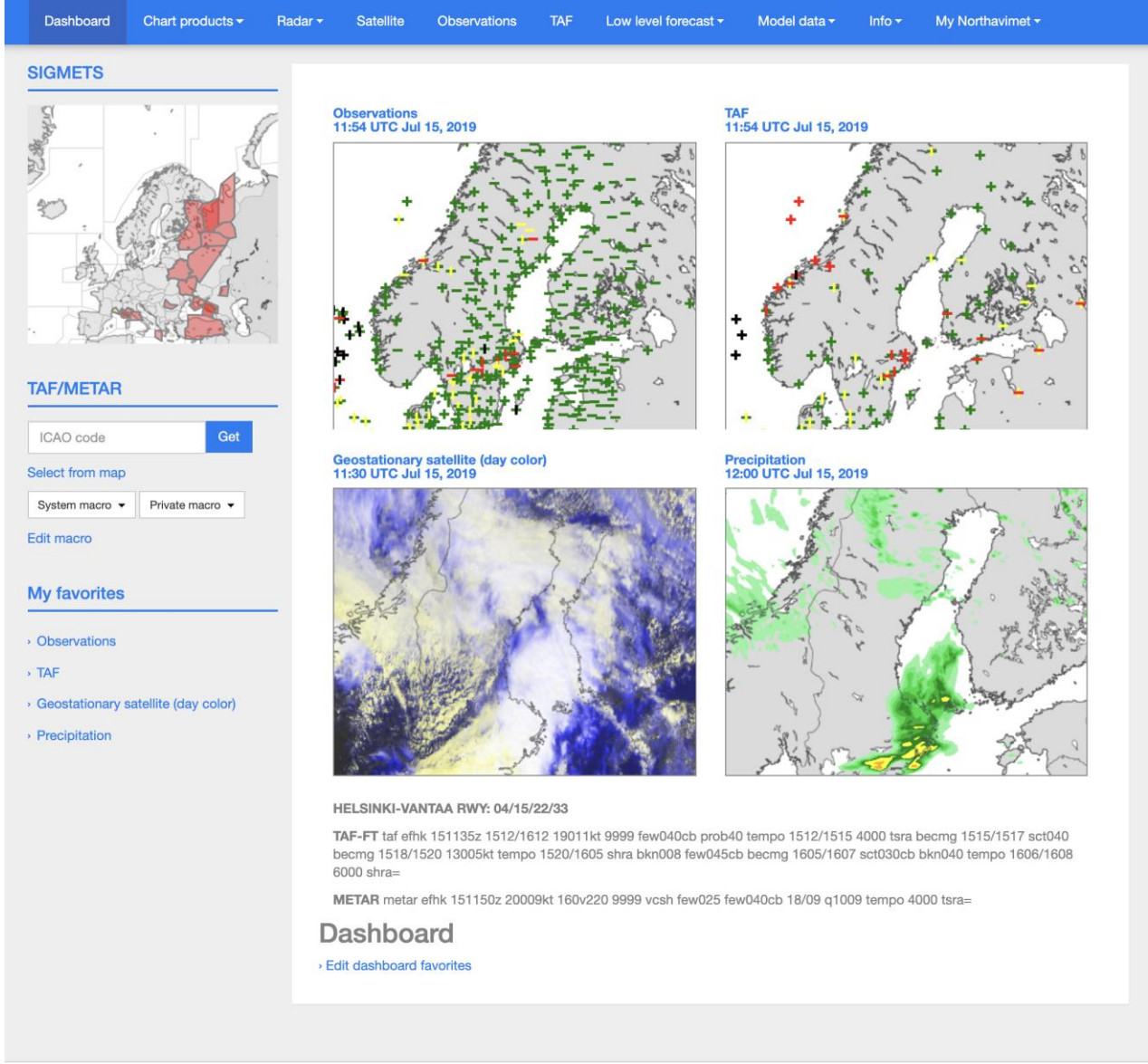
- Some general aviation services fall within international regulation as recommended practice
  - Until 1 Jan 2020: ICAO Annex 3 20th edition
  - From 2 Jan 2020 onwards: (EU) 2017/373
- Can be complemented by additional national products
- Scope of services as determined by the competent authority in consultation with users
- If services under regulation, cost recovery from en-route and terminal charges
- General aviation supported by commercial aviation users due to enhanced flight safety

General aviation as a user of meteorological information

- Number of GA pilots small in Northern Europe due to cost and short season
- Significant user groups are aviation schools, HEMS operators, balloonists and increasingly drone operators
- Only operate in VFR conditions, observations and chart products are very important
- Purpose of TAF is to serve commercial scheduled aviation, this can cause frustration with general aviation
- Quality of Auto-METAR typically a major issue
- Pilots can take significantly more weather risk
- Difficult to communicate changing weather situations to the cockpit

Current services in Northern Europe - Denmark

- Designated Aeronautical Meteorological Service Provider (METSP): Danish Meteorological Institute (DMI)
- Self-briefing portal at www.northavimet.com
  - Flight plan and NOTAM at http://briefing.naviair.dk/
- Aeronautical meteorological services from NAMCON member institutions
- Official MET self-briefing portal for Denmark
- Low-Level Forecast (LLF), Soaring/Ballooning forecasts, meteograms



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Jaakko Nu

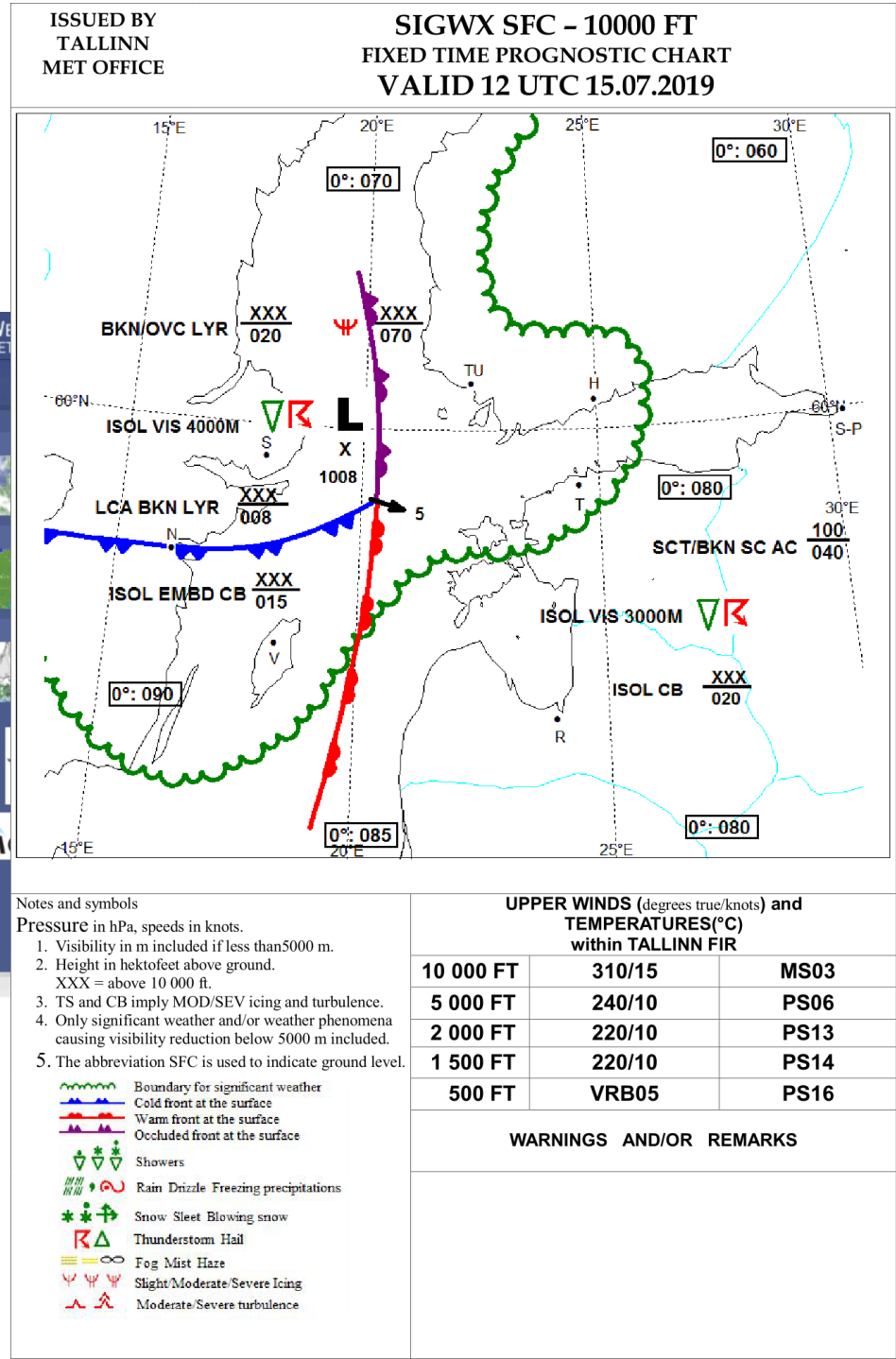
DMI Vejr, klima og hav
Icelandic Met Office
Norwegian Meteorological Institute
Finnish Meteorological Institute
SMHI
Latvijas Vides, Ģeoloģijas un Meteoroloģijas Centrs
Republic of Estonia Environment Agency
NAMCON

ATC information:

Naviair Briefing (Denmark)
Lennuilm (Estonia)
Ilmailusää (Finland)
Isavia (Iceland)
Latvijas Gaisa Satiksme (Latvia)
Avinor IPPC (Norway)
LFV Flightplanning (Sweden)

Current services in Northern Europe - Estonia

- Designated METSP: Estonian Environment Agency (ESTEA)
- Aviation weather portal at www.lennuilm.ee
  - Satellite, radar and numerical model information
  - OPMET data: SIGMET, METAR, TAF & AIREP SPECIAL
  - Official internet self-briefing portal at https://isb.eans.ee
- SIGWX chart (SFC- FL100)

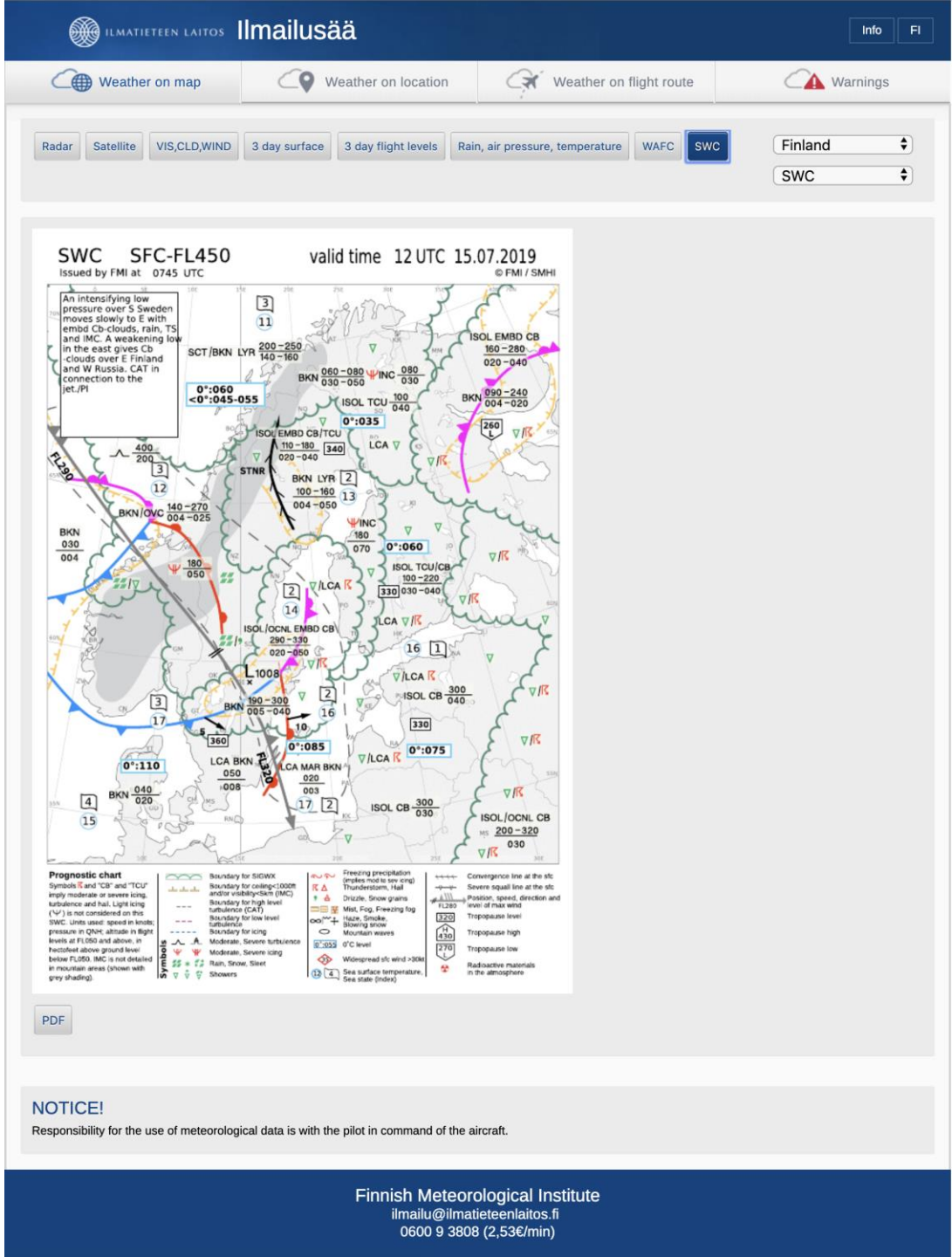


ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Jaakko Nuottokari

Current services in Northern Europe - Finland

- Designated METSP: Finnish Meteorological Institute (FMI)
- Self-briefing portal at www.ilmailusaa.fi
  - Radar, satellite, numerical models, OPMET data
  - Flight plan, AIP, SUP, PIB and AUP at www.ais.fi
- Significant Weather Chart (SWC) SFC-FL450 produced with SMHI, Sweden
- GAFOR (until 30 Sep 2019), AWS-METAR and mast observations for general aviation
- LLF from 1 Oct 2019 onwards

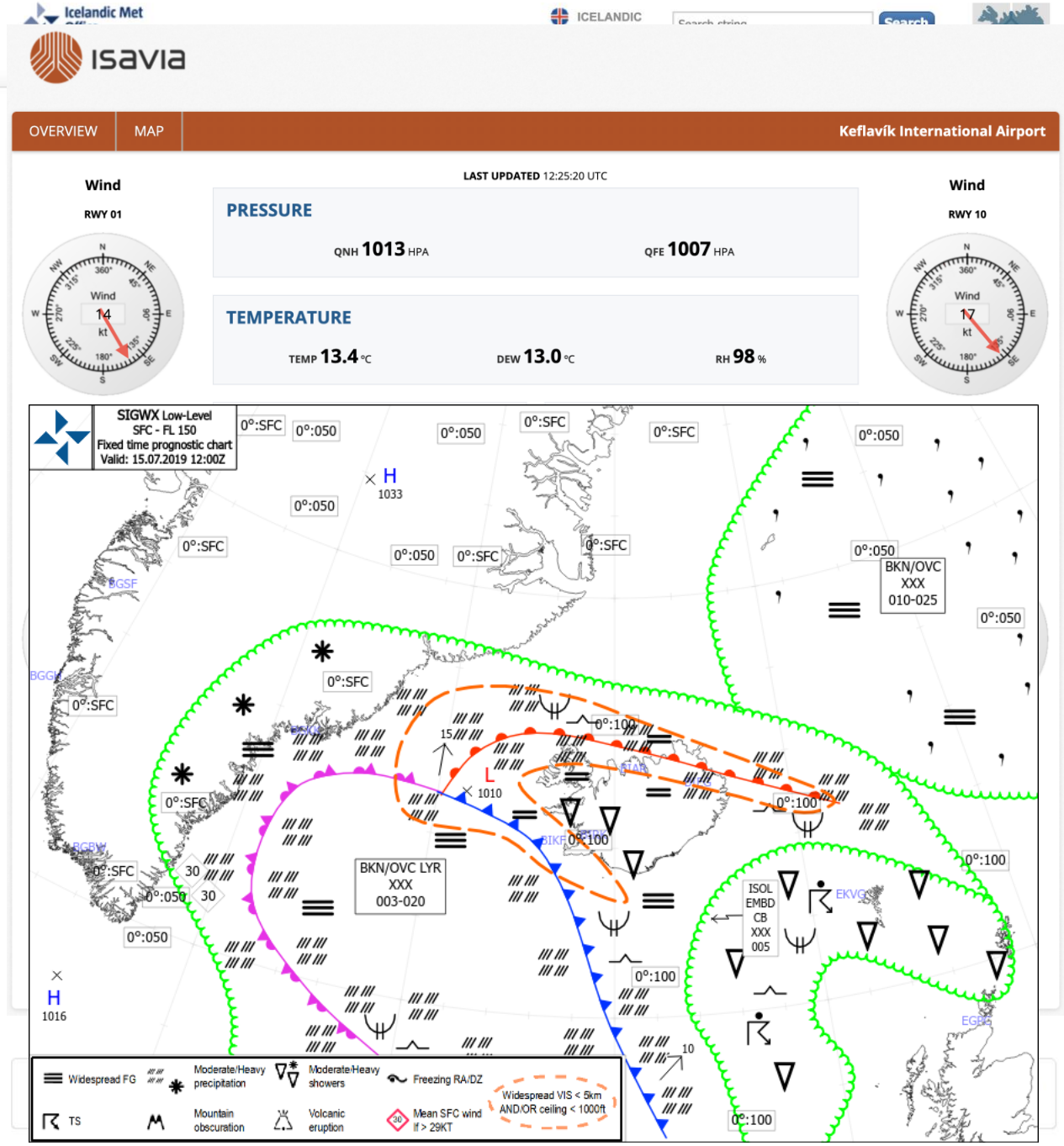


ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Jaakko Nuottokari

Current services in Northern Europe - Iceland

- Designated METSP: Icelandic Met Office (IMO)
- Aviation weather information at: https://en.vedur.is/weather/aviation/
  - OPMET data, numerical model data, radar, satellite, soundings, PIREPs
- Weather observations available at https://www.isavia.is/en/corporate/c-preflight-information/aviation-weather
- Significant Weather Chart (SIGWX) SFC-FL150

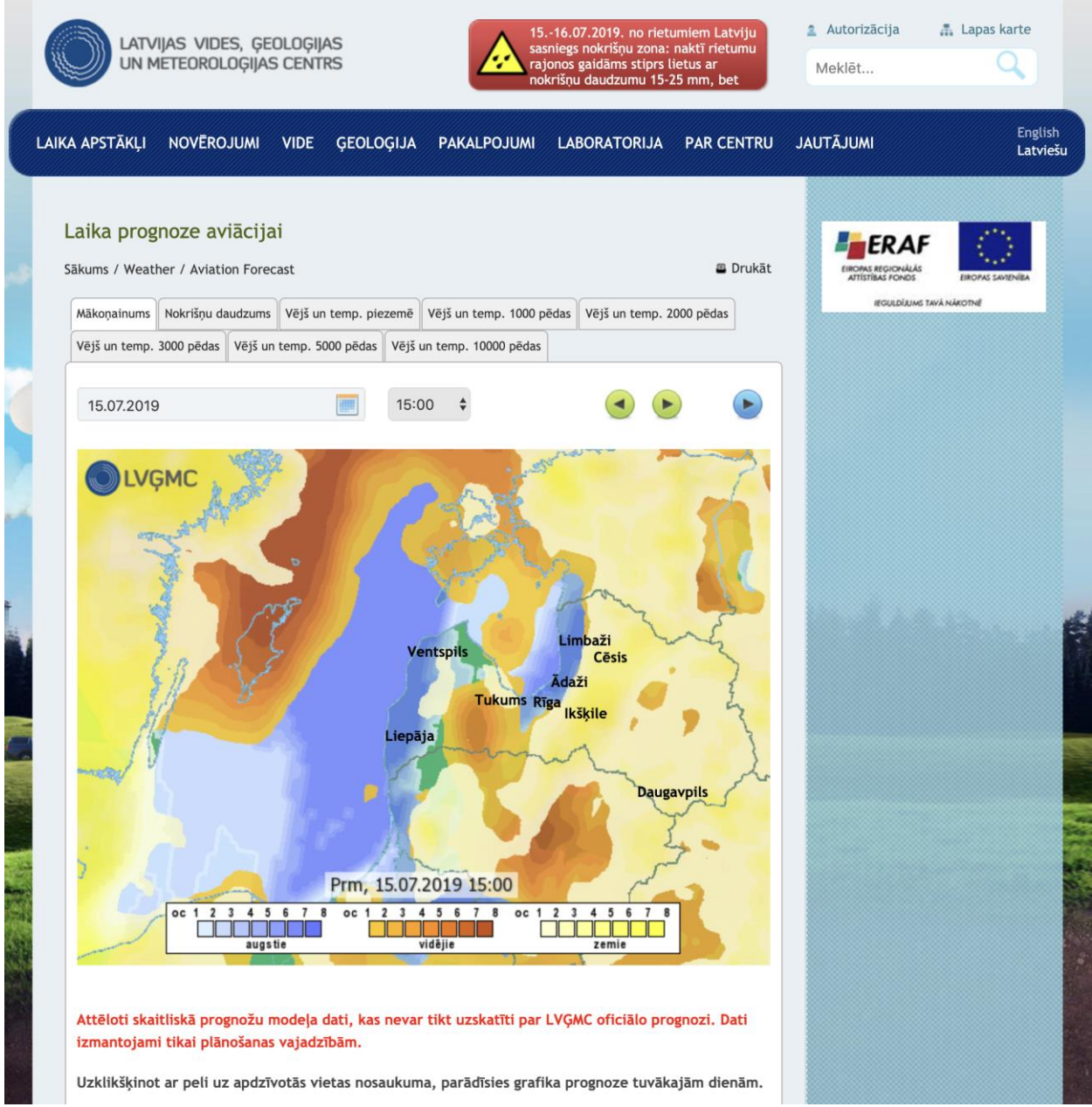


ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Jaakko N

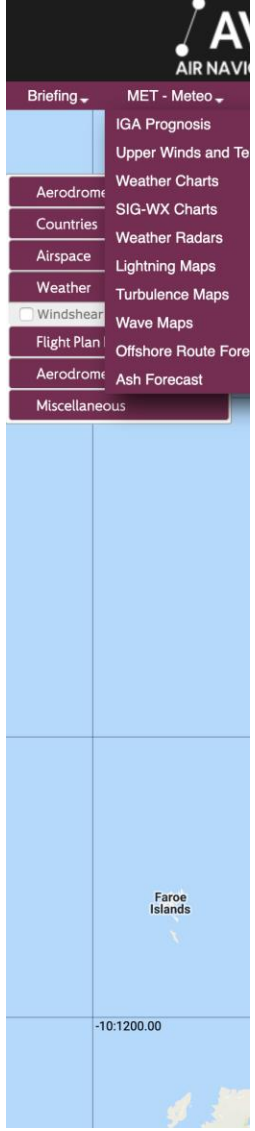
Current services in Northern Europe - Latvia

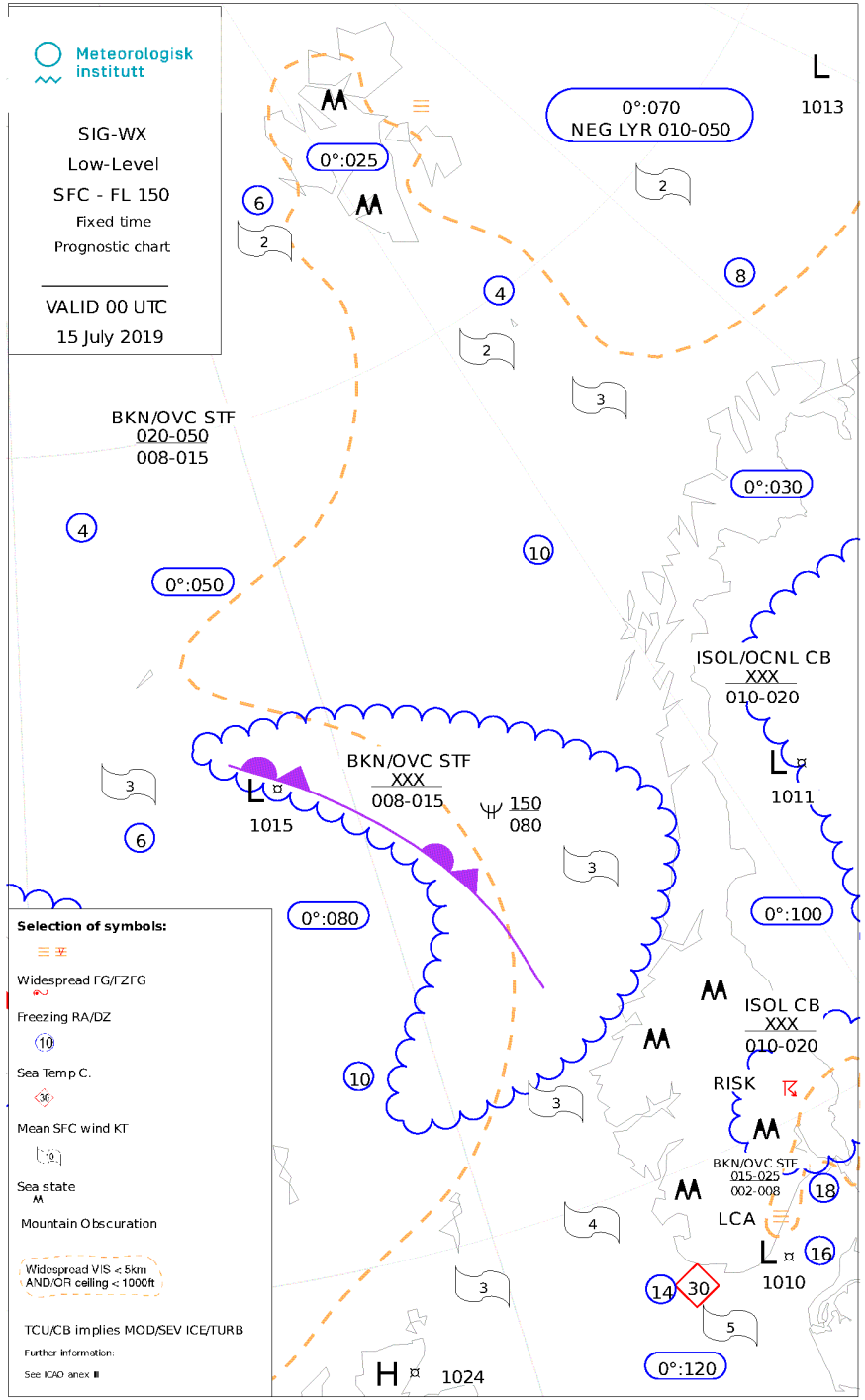
- Designated METSP: Latvian Environment, Geology and Meteorology Centre (LEGMC)
- Self-briefing portal at https://lgs.ead-it.com/
- Aviation weather products at: https://www.meteo.lv/laika-prognoze-aviacija/?nid=833 (in latvian)
  - Numerical model products
- Significant Weather Chart (SWC) SFC-FL150
- GAMET and AIRMET



Current services in Northern Europe - Norway

- Designated METSP: Norwegian Meteorological Institute (MET.no)
- Self-briefing portal at https://www.ippc.no/ippc/index.jsp
  - Radar, chart products, lightning, turbulence, wave and offshore route forecasts, OPMET data
- Significant Weather Chart (SWC) SFC-FL150
- Offshore route forecasts



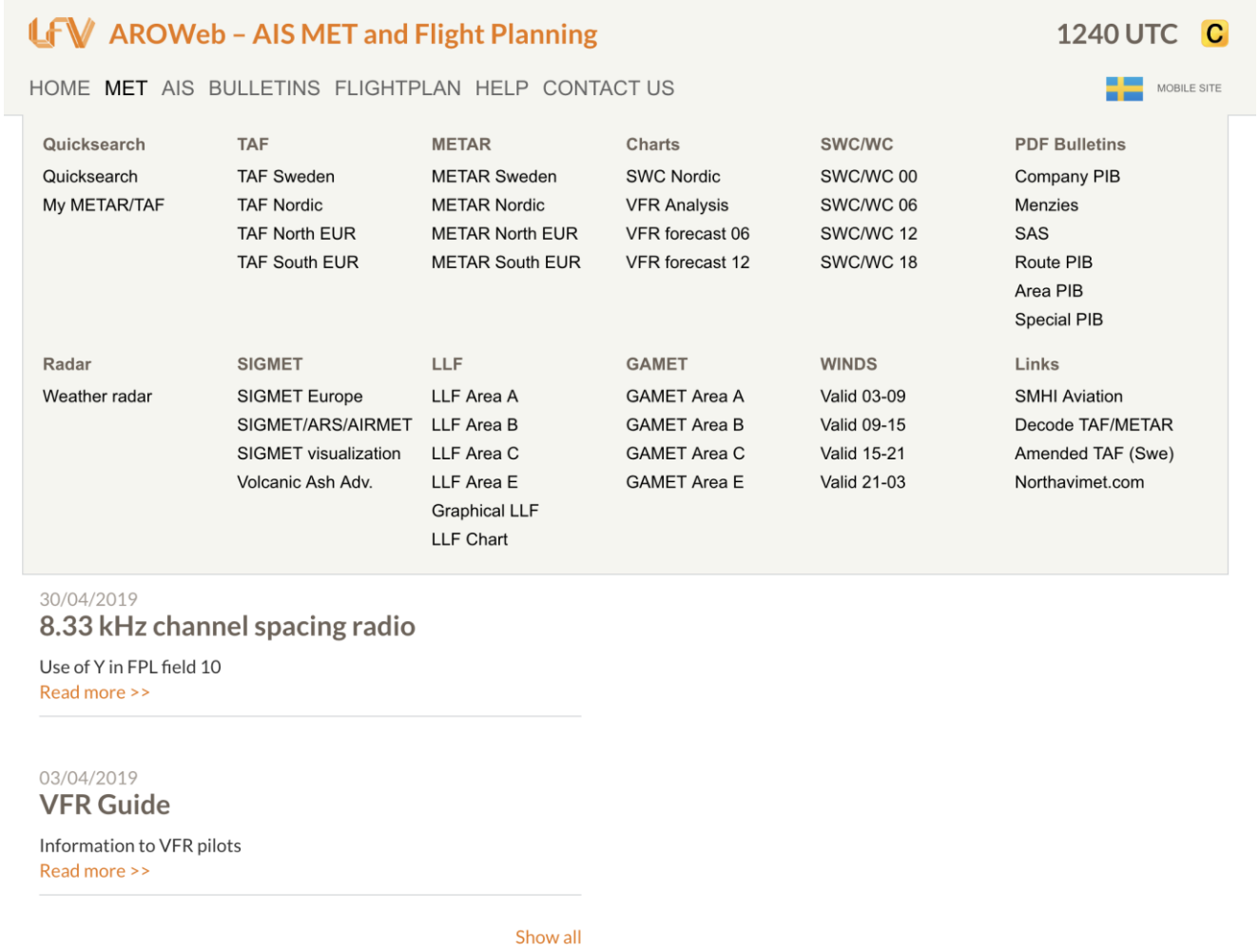


ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Jaakko Nuottokari

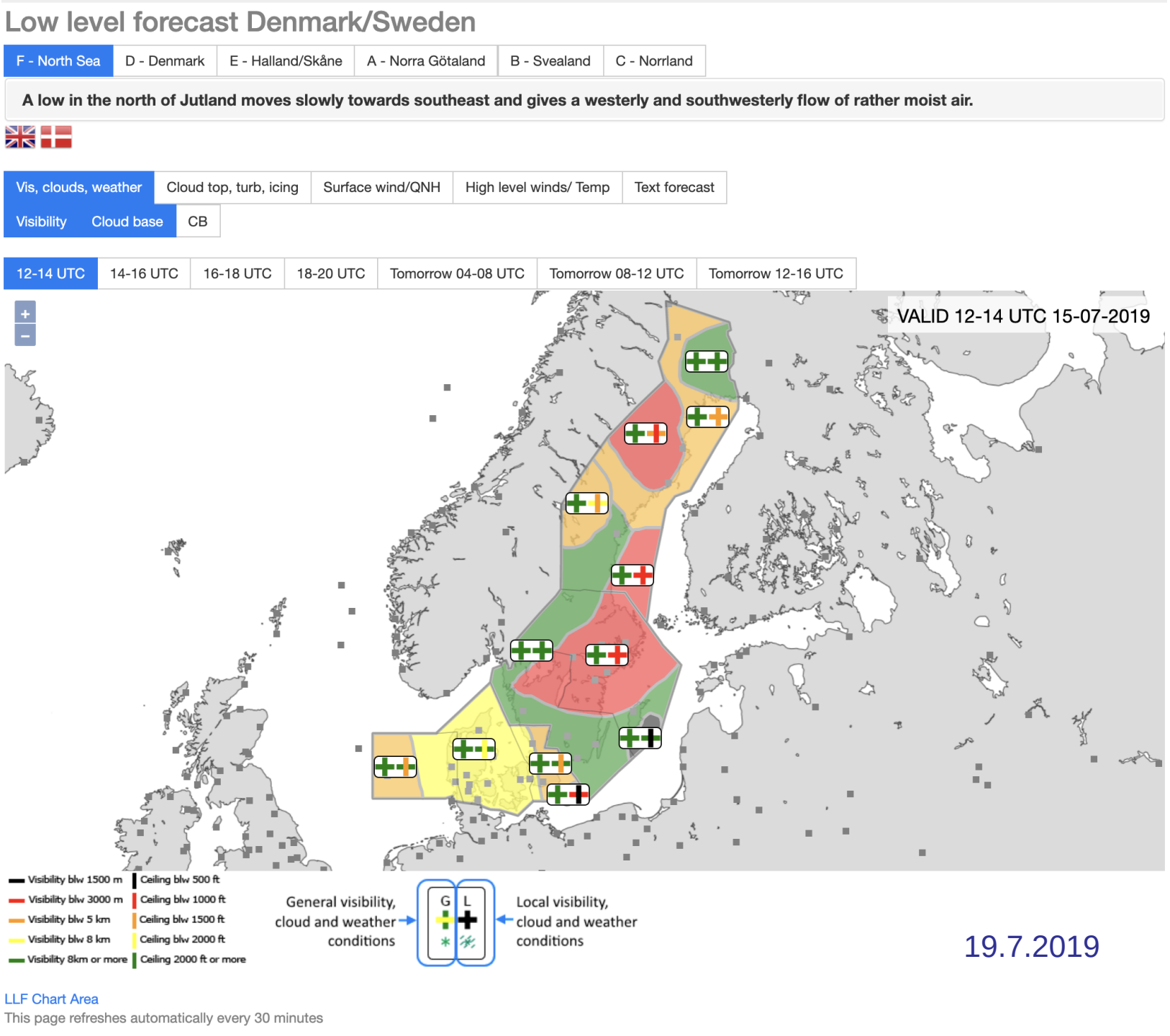
Current services in Northern Europe - Sweden

- Designated METSP: Swedish Meteorological and Hydrological Institute (SMHI)
- Self-briefing portal at https://aro.lfv.se/
  - Radar, chart products, OPMET data, VFR analysis, GAMET, Lowl-Level Forecast (LLF) (link to Northavimet)
- Significant Weather Chart (SWC) SFC-FL450 produced with FMI, Finland
- GAMET, LLF, VFR analysis & forecast



Low-Level Forecast (LLF)

- Graphical format of GAMET/GAFOR
- Fast overview of significant weather
- Phenomenon-based vs. area-based forecast
- Also with text
- Seamless across borders



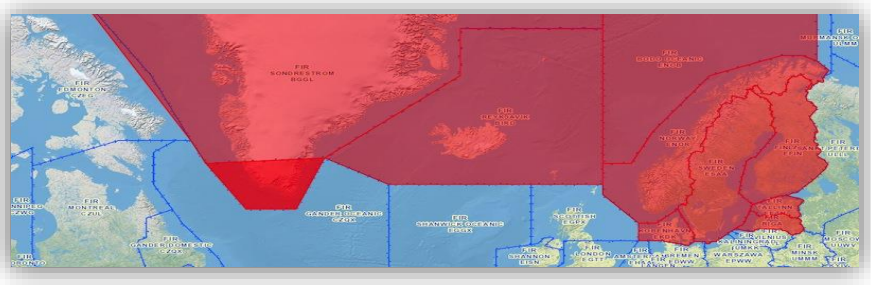
ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

19.7.2019

LLF production

- Production system for the LLF service is at SMHI with easy access via web browser from other producing centres
- Weather objects transferred as GeoJSON files across platforms
- Regular coordination between producing centres
- Approved by 7 competent authorities as being compliant to 2017/373 requirements for low-level forecasts
- High time and area resolution
- https://www.northavimet.com/low-level-forecast/denmarksweden/

NAMCON



DMI
Danish Meteorological Institute

Icelandic Met Office

Norwegian Meteorological Institute

LATVIJAS VIDES, ĢEOLOĢIJAS UN METEOROLOĢIJAS CENTRS

REPUBLIC OF ESTONIA
ENVIRONMENT AGENCY

ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

SMHI

Northern Europe Aviation Meteorology Consortium – NAMCON

www.namcon.aero

Copenhagen Declaration (2011)

- Signed by NMS Directors from all 7 NAMCON States
  - *Note. Cooperation on aviation weather matters between Nordic NMS has started much earlier*
- Willingness to cooperate in production and development
- Agree on consortium – equal partners
- Cost-efficiency and high quality achieved through
  - Efficient division af tasks without regard to national borders
  - Minimising duplication
  - Harmonised products
  - Automated production without compromising quality
  - Mutual back-up production capabilities

Harmonisation, joint operations and shared tools:
Examples of results so far

1. Joint Significant Weather Chart production between FIN and SWE: N(ord)SWC using SWIM-compliant SWC tool
2. Joint aviation weather briefing portal www.northavimet.com
3. Joint low-level forecast (LLF) production between SWE and DEN using a new interactive tool
4. Subcontracted service: DMI (DEN) responsible for TAFs in southernmost Sweden
5. Some back-up procedures and technical solutions e.g. for AFTN distribution between SWE-DEN
6. SIGMET coordination procedure between all seven countries
7. TAF and SIGMET Guidelines developed and implemented
8. FMI's TAF verification tool in use in all NAMCON countries

Harmonisation, joint operations and shared tools: Future Plans

- Delivering VA SIGMETs from Norway and Iceland for all NAMCON FIRs
- Harmonised LLF product available in all (or almost all) countries
- Two SWCs: Greenland-Iceland & Scandinavia (DEN-FIN-NOR-SWE-EST-LAT-LIT) produced from two joint centres
- Service delivery ensured via backup arrangements (cross-border)
- TAFs verified with same methods
- Collective research aiming for new products and improved quality of services (RP3, PCP etc.)
- Common SWIM interface to users (www.NorthAvimet.com portal)
- Shared tools and software, where feasible
- Common practices and guidance, where feasible

NAMCON Vision for GA

- Harmonised and consistent graphical low-level forecast extending on the current LLF product produced by SMHI and DMI
- Harmonised significant weather chart SFC-FL450 covering the entire Scandinavian area produced by a few centres
- Additional services developed within SESAR (de-icing and winter weather) as SWIM services from the producing centre
- Single complementary point of entry for Northern European MET SWIM services drawing from national SWIM nodes
- Supporting added value services from the private sector

ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

www.northavimet.com

www.namcon.aero