

SARWeather

High-resolution & On-Demand
Weather Forecasts

for Search And Rescue

Ólafur Rögnvaldsson - or@belgingur.is
Institute for Meteorological Research / Belgingur
<http://www.sarweather.com>

Introduction: It is rather the rule than the exception that rescue missions and search operations for missing people are initiated in extreme weather conditions. In any case, such missions are very dependent on the weather forecasts as the safety of the field personnel must be secured in the best possible manner. SAR operators and personnel work in extreme conditions, where better and more timely information is of paramount importance.



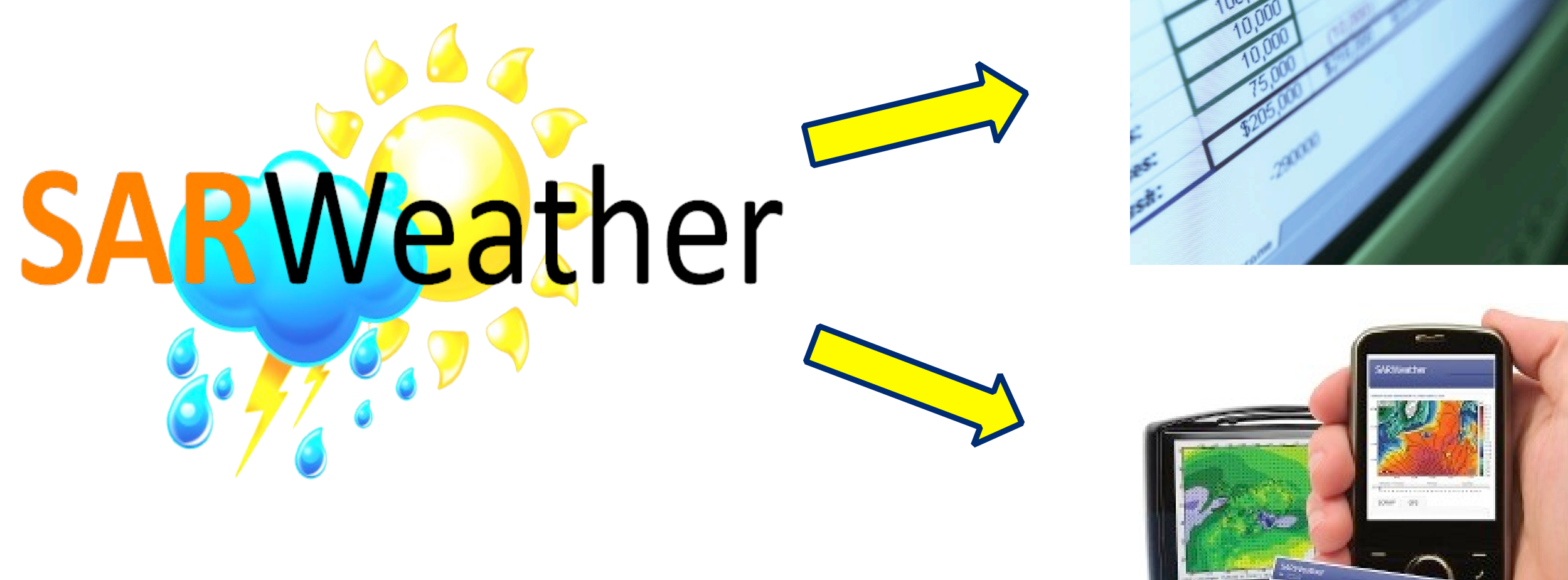
Figure 1: Weather often greatly affects SAR missions.

On-site measurements and data assimilation: New methods for data assimilation and nowcasting are under constant development and aim at providing increasingly accurate weather forecasts on the time scale of minutes and spatial scales of few hundred meters. Obtaining the extra meteorological observations needed as input to these methods can however be tricky in remote areas or regions severely affected by natural catastrophes. The range of UAV's flying meteorological observatories is a vital addition to the toolbox. Increasingly robust aircraft models can be deployed at a well-defined extra cost, with current weather conditions, in particular wind speed, being the determining factor. Meteorological observatories may even be retrofitted on SAR reconnaissance drones.



Figure 2: A simple UAV (SUMO - Small Unmanned Meteorological Observatory) can operate as a re-usable radiosonde, gathering information on temperature, pressure, humidity and winds up to 4km above ground.

Integration with existing decision support software: SARWeather can both be used as a stand-alone product as well as being integrated to pre-existing software solutions.



Simple three step process: Initiating a highly accurate weather forecast is simple when using SARWeather.



Figure 3: SARWeather is On-Demand, has global coverage, and is deployable in three easy steps.

Benefits of SARWeather

- No need for prior knowledge in atmospheric modeling
- No costly hardware build-up or maintenance
- Easily integrated with existing decision support software
- On-site data assimilation
- Supports location based services
- Automatic initiation is possible

SARWeather can be easily adapted to other sectors

- Wind energy
- Defense industry
- Outdoor activities (golf, hiking, ...)



Current use of SARWeather

- High resolution forecasts for Haiti
- High resolution forecasts for Eyjafjallajökull ['ɛɪja,fjatla,jœ:kʏtʃ]
- Medium resolution forecasts for Lake Victoria Basin

Status of SARWeather

- User testing (ICE-SAR and CPD of the Icelandic Police) starts later this month
- Official launch at the RESCUE-2010 conference in October
- To be tested within the GDACS (Global Disaster Alerts and Coordination System) consortium in Q4 of 2010

Acknowledgements

SARWeather is partly funded by NORA and FP7

