



Foto: KNUT S. VINDFALLET



Foto: JON INGEMUNDSEN



H2020 project

**EnhANCing emergencY management and response to extreme
WeatHER and climate Events**

The ultimate purpose of ANYWHERE is to empower exposed responder institutions and citizens to enhance their anticipation and pro-active capacity of response to face extreme and high-impact weather and climate events.



Problem

- Extreme weather is increasing in frequency and severity
 - We must be prepared to respond to extreme weather incidents
- Better data sources
 - Weather forecasts
 - Real-time sensor data
- The local decision-makers do not have appropriate tools to assess how this information will affect the community



Solution

- ANYWHERE Risk Analyser – a tool developed by SINTEF to provide better local support for decision makers
- Risk-based solution using a combination of multi attribute decision support and machine learning
 - Based on knowledge about local conditions
 - Local weather-related forecasts
 - Real-time sensor data
 - Map-based visualization
 - Suggested local measures and actions

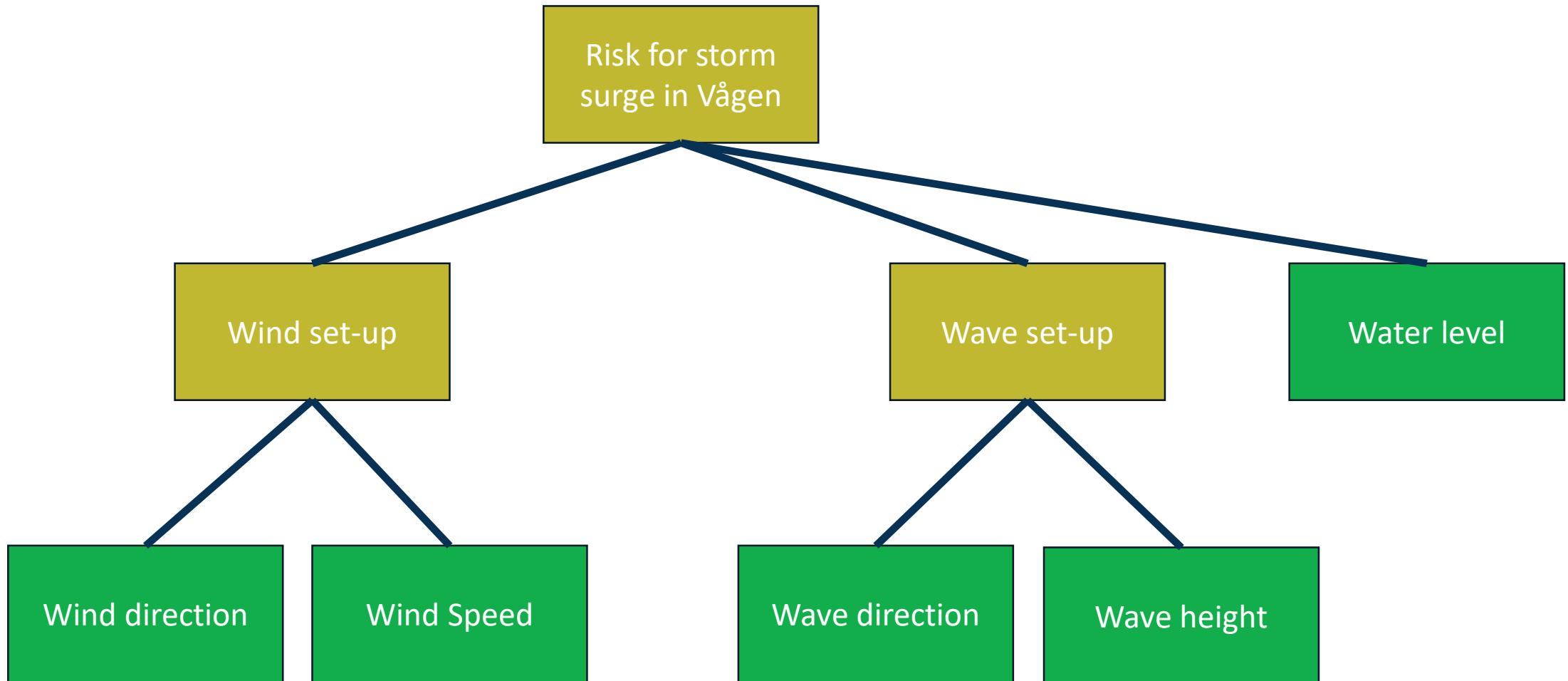
Risk Analyser for Stavanger

- Decision support tool handling risk for storm surge in Vågen, Stavanger. Taking weather parameters (forecasts) as input, producing a risk level with associated, suggested actions for the given risk level. Provides current risk value, and risk values for the next 3 days.
- *Pilot site:* Nordic – Norway – Stavanger
- *Main users:* Personnel at the crisis management staff in Stavanger municipality
- *Use case:* Giving a dynamic risk picture assessing the risk for storm surge in Vågen, Stavanger.

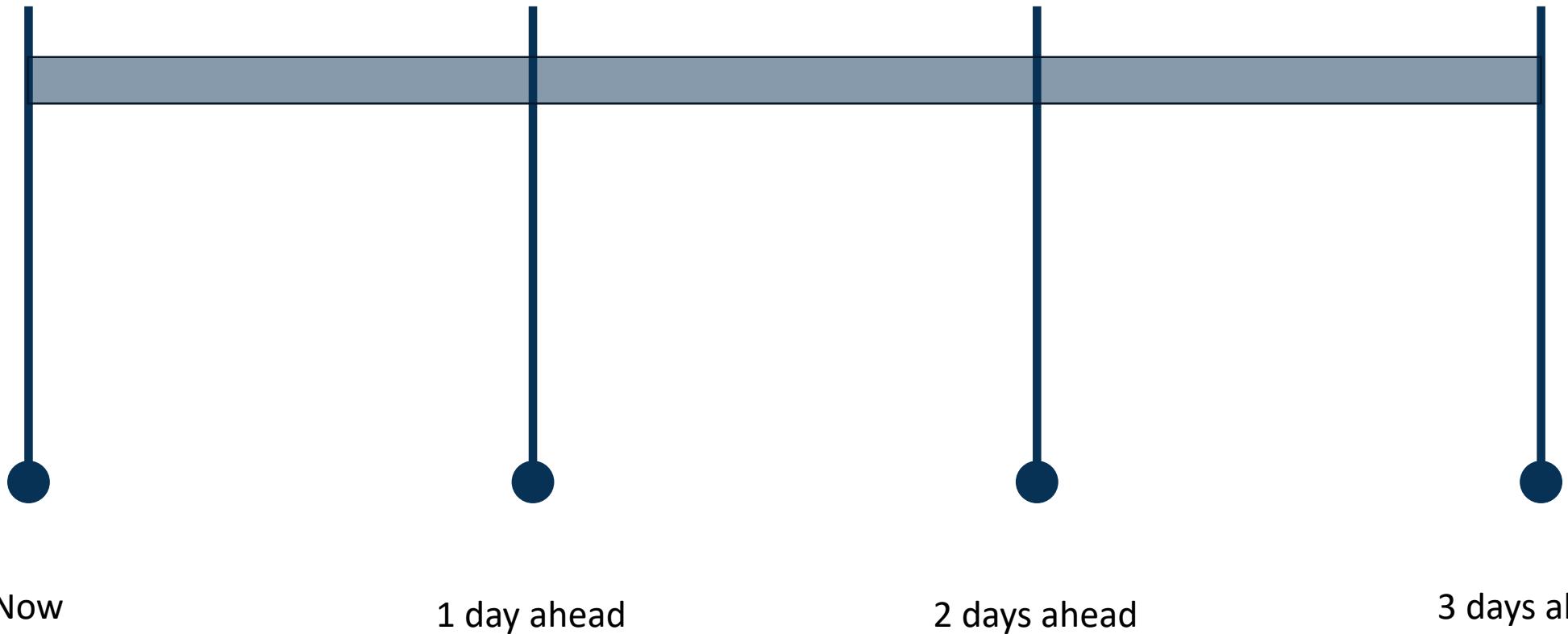


Risk model for Stavanger

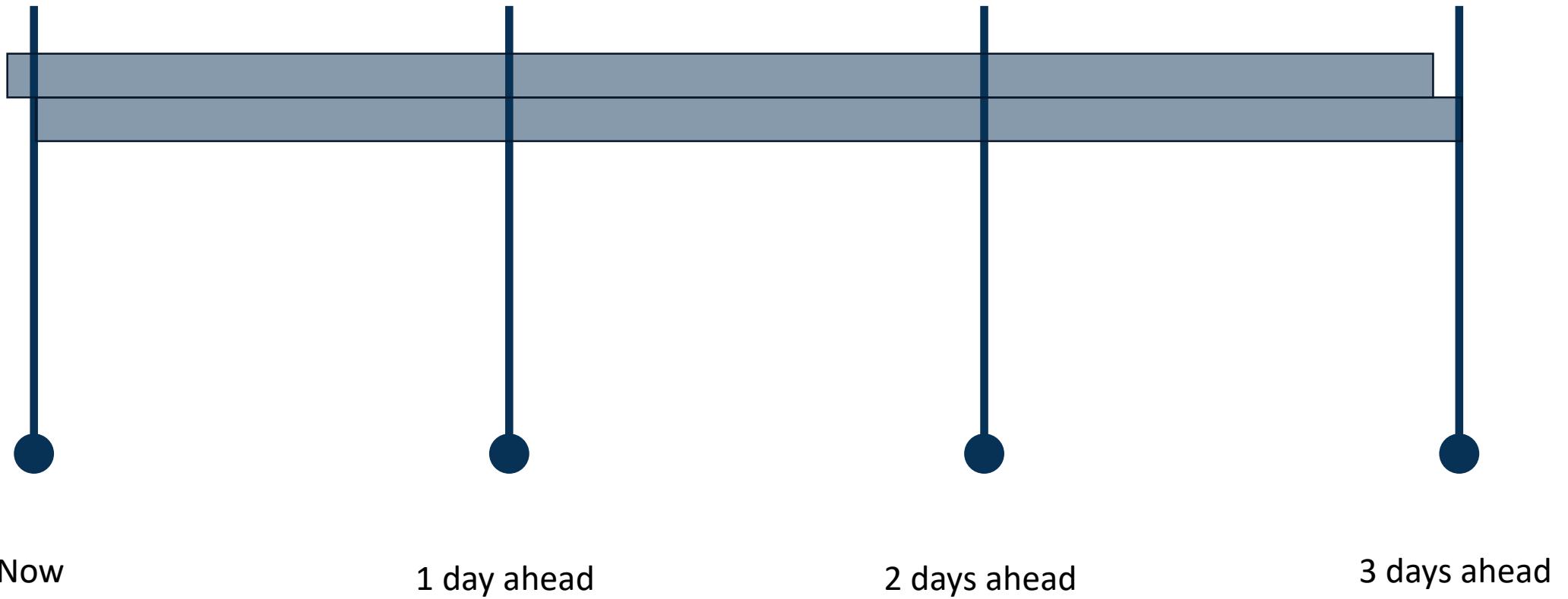
"A strong wind was blowing and the sea grew agitated" [John 6:18]



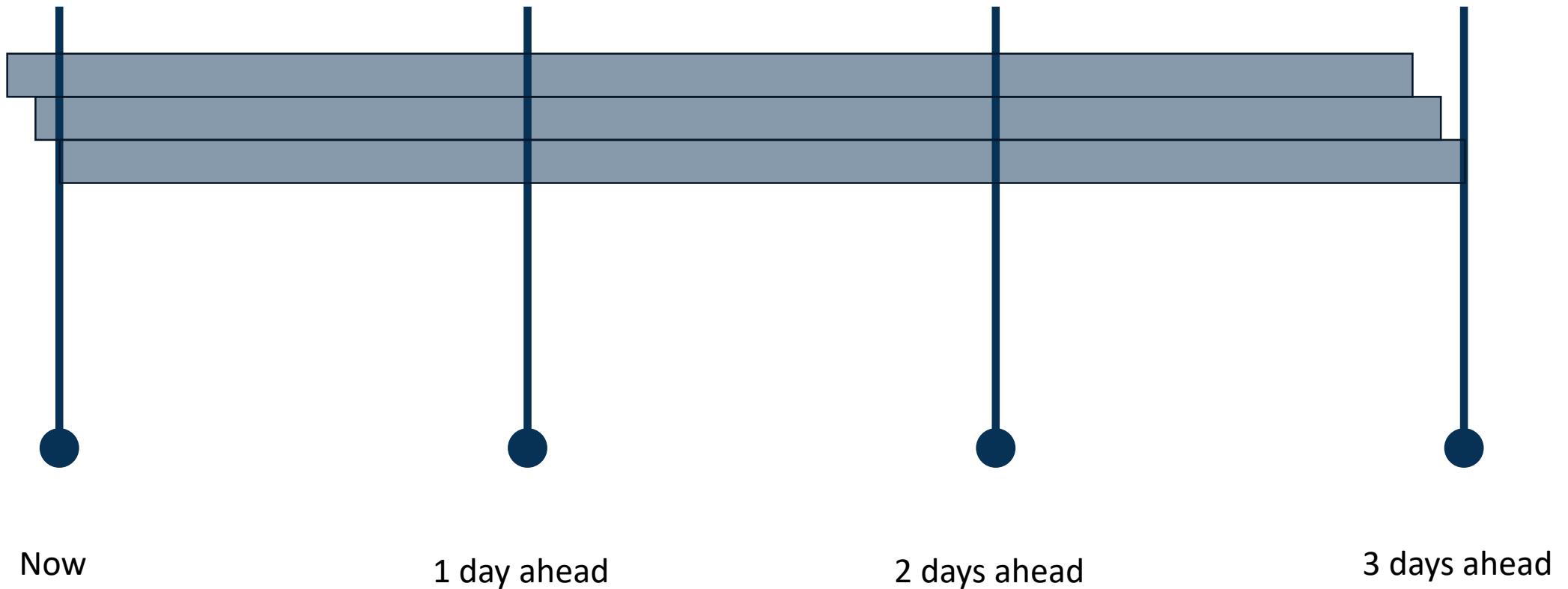
Time series for three days computed every hour



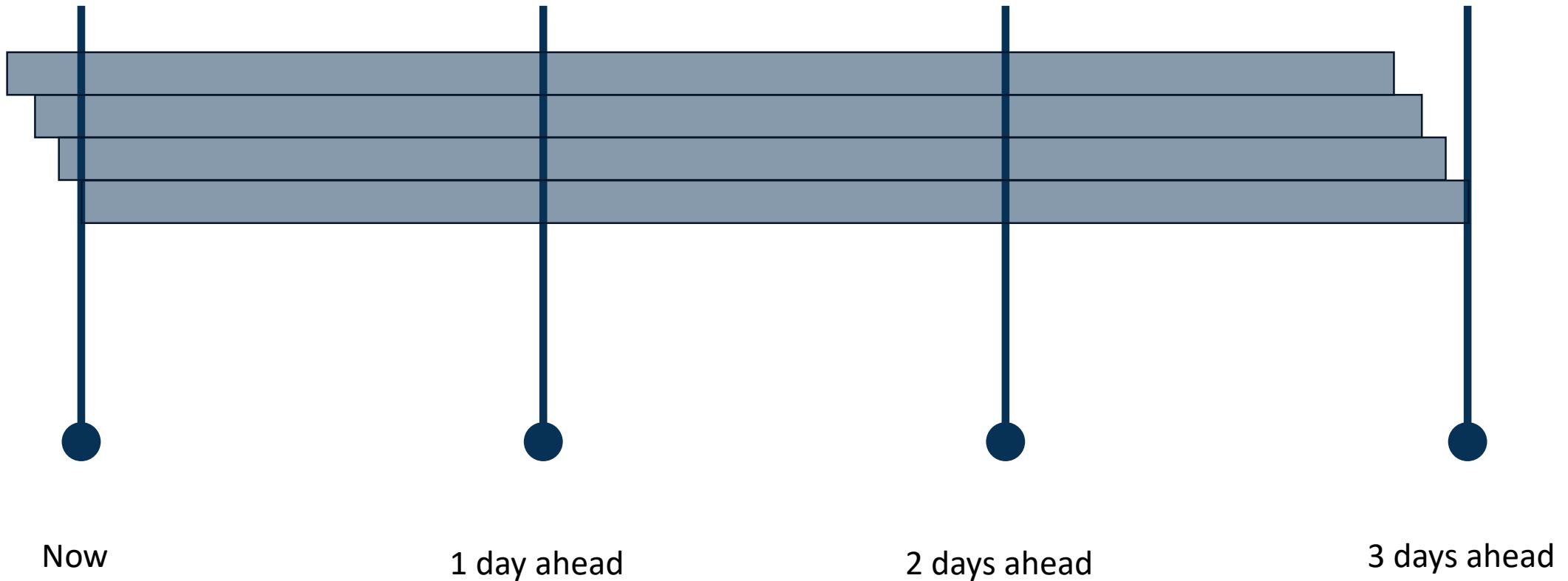
Time series for three days computed every hour



Time series for three days computed every hour



Time series for three days computed every hour





IMPACT LAYERS

TOOLKITS

A4 EU

12 : 59 PM
UTC-01:00
25-JAN-2019

BOTH

MAP

> RISK ASSESSMENT

YOU ARE LOGGED IN
[Go to ARA](#)

*There are 4 features on the map.
Click on it to read details for each of them.*

FEATURE DETAILS

Risk of flooding in Vägen

This risk assessment tool will predicate the risk of flooding in Vågen. The model represents conditions that are relevant for decision-makers in Stavanger municipality.

MACHINE LEARNING

Forecast 01-11-2018 at 11:00pm

- Risk prediction: Moderate and Increasing Risk
 - Action card: Mobilise crew.
 - Risk prediction Moderate and Increasing Risk

DEXI

Forecast 01-11-2018 at 11:00pm

- Risk prediction: Low risk
 - Action card: Unproblematic
 - Risk prediction Low risk

01.11.2018 11:00 PM
03.11.2018 06:00 PM

A set of three blue rectangular icons with white symbols: a left-pointing arrow, a right-pointing arrow, and a square.

SATEL

- 6 HOURS

01/11/2018 11:00 PM

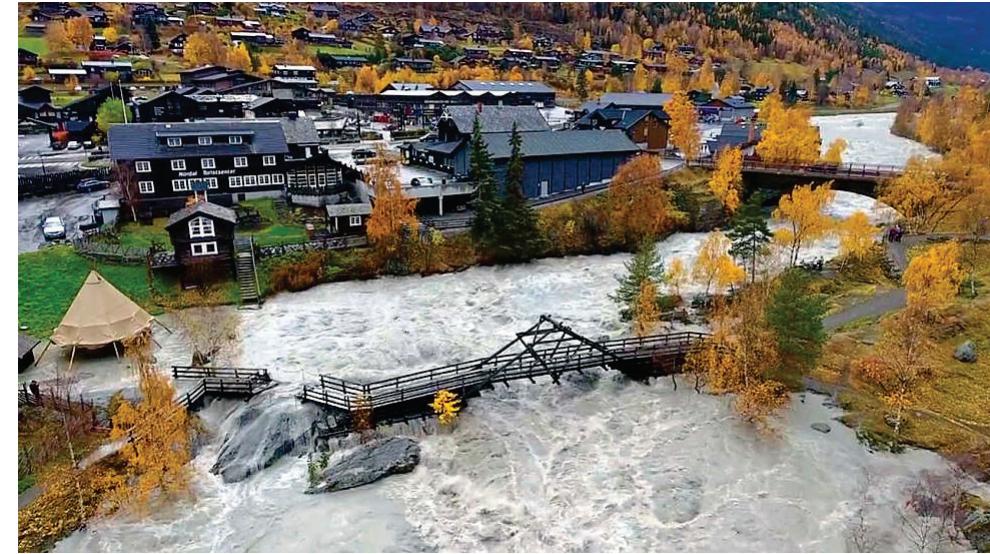
+6 HOURS

10

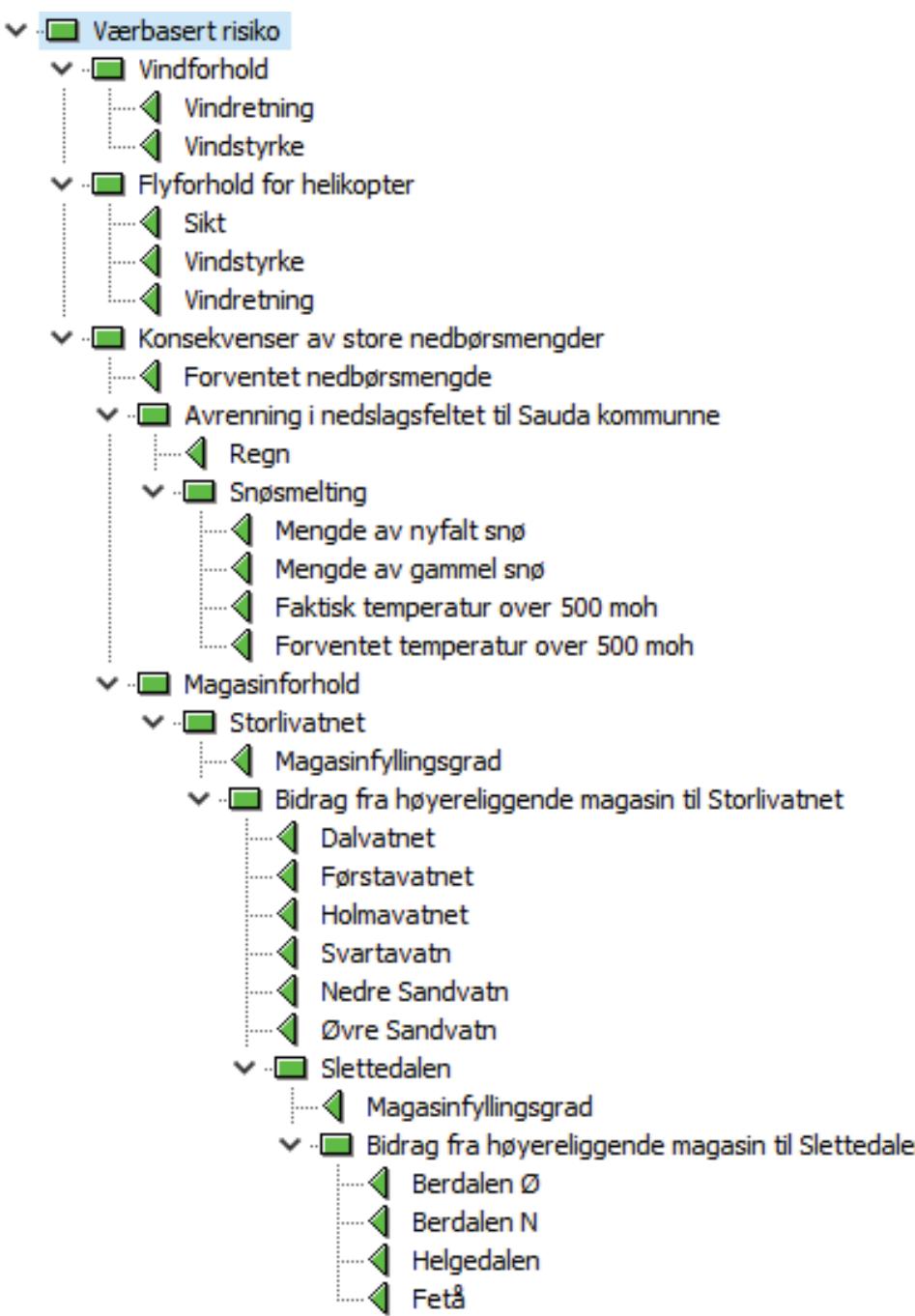
SINTEF

Risk Analyser for Sauda

- Decision support tool handling risk for flooding in populated areas in Sauda. Taking weather parameters (forecasts + observations) and sensor data (real time) as input, producing a risk level with associated, suggested actions for the given risk level. Provides current risk value, and risk values for the next 3 days.
- *Pilot site:* Sauda, Norway
- *Main users:* Personnel at the crisis management staff in Sauda municipality, road authorities, local hydro power provider
- *Use case:* Giving a dynamic risk picture assessing the risk for flooding in populated areas in Sauda.



Risk mode



"...I will send rain on the earth for forty days and forty nights..." [Gen 7:4]

Wind related

Wind direction

Wind S

Consequences
from
precipitation

Snow related

Water dam
related

There are 4 features on the map.
Click on it to read details for each of them.

FEATURE DETAILS

sauda wind direction
Weather Product

Forecast

Time	Value
26 Sep 2019 09:00 pm	3.9 (direction degrees)

sauda wind speed
Weather Product

Forecast

Time	Value
26 Sep 2019 09:00 pm	0.0 (meters per second)

DEMO



SATELLITE



28.02.2019 04:00 PM
02.10.2019 07:00 AM

- 6 HOURS

26.09.2019 09:00 PM

Extreme weather and aviation

