
Space Innovation Summer
Christopher Frisk
SPACE INNOVATION FORUM
4 - 5 September 2019

Space Innovation Summer

Purpose and goals

- Increase flow of potential startup-based research
- Make “progress” on project
  - 1st – Customer and market validation

-> Forward strategies

  - 2nd – Tech verification, prototyping, demonstration, testing
- Provide an outside perspective

Individual Development

Demonstrate regional attractiveness

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THREE CASES

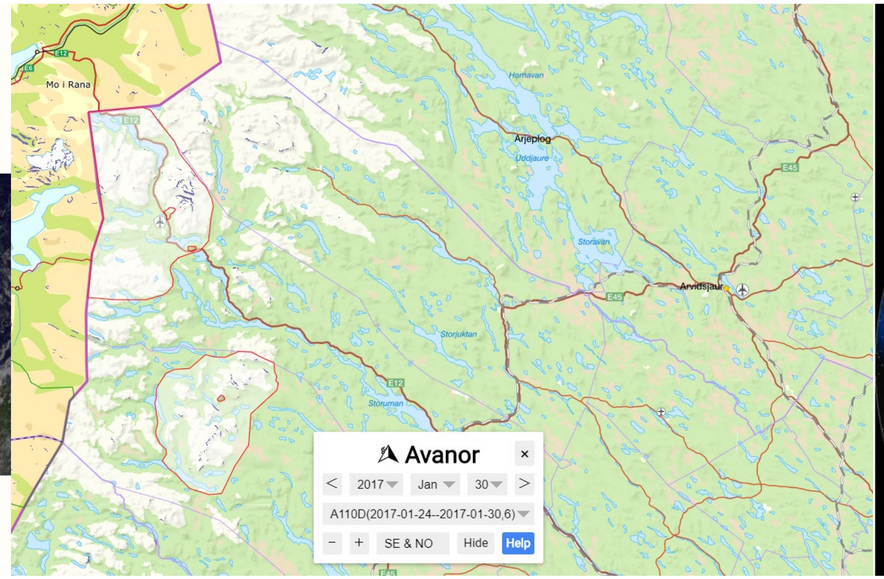
PASQ- Space Equipment Testing and Qualification

Mauro Rojas

Niels De Graaf

CASE OWNER

Emil Vinterhav



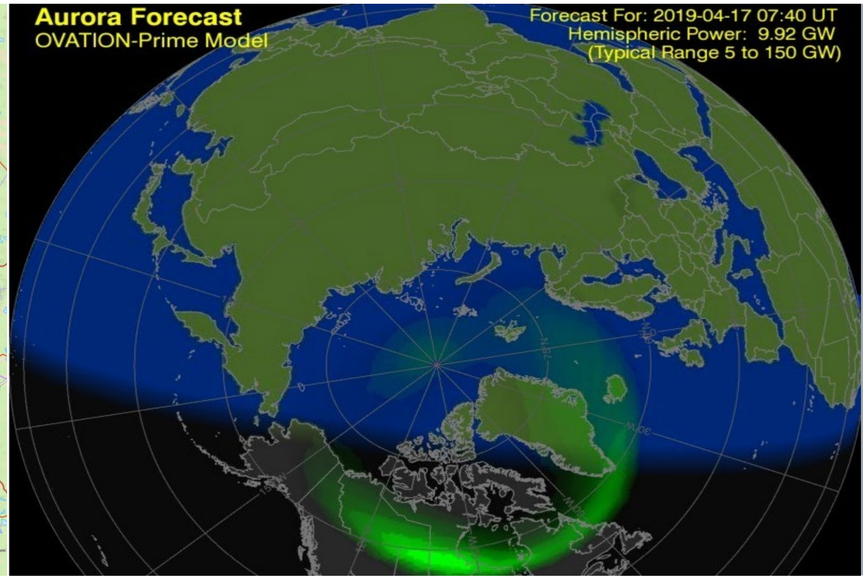
ANOVO – Avanalanche Forecast Application

Aydin Najhaee Zadel

Rebecka Svensson

CASE OWNER

Masatoshi Yamauchi



IRF – Aurora Forecast Application and API

Aron Widforss

Rickard Åkerstrand

CASE OWNER:

Aron Widforss

remote avalanche prediction

Make earth benefit from space

the problem

- Current avalanche forecasts are done manually on the ground.

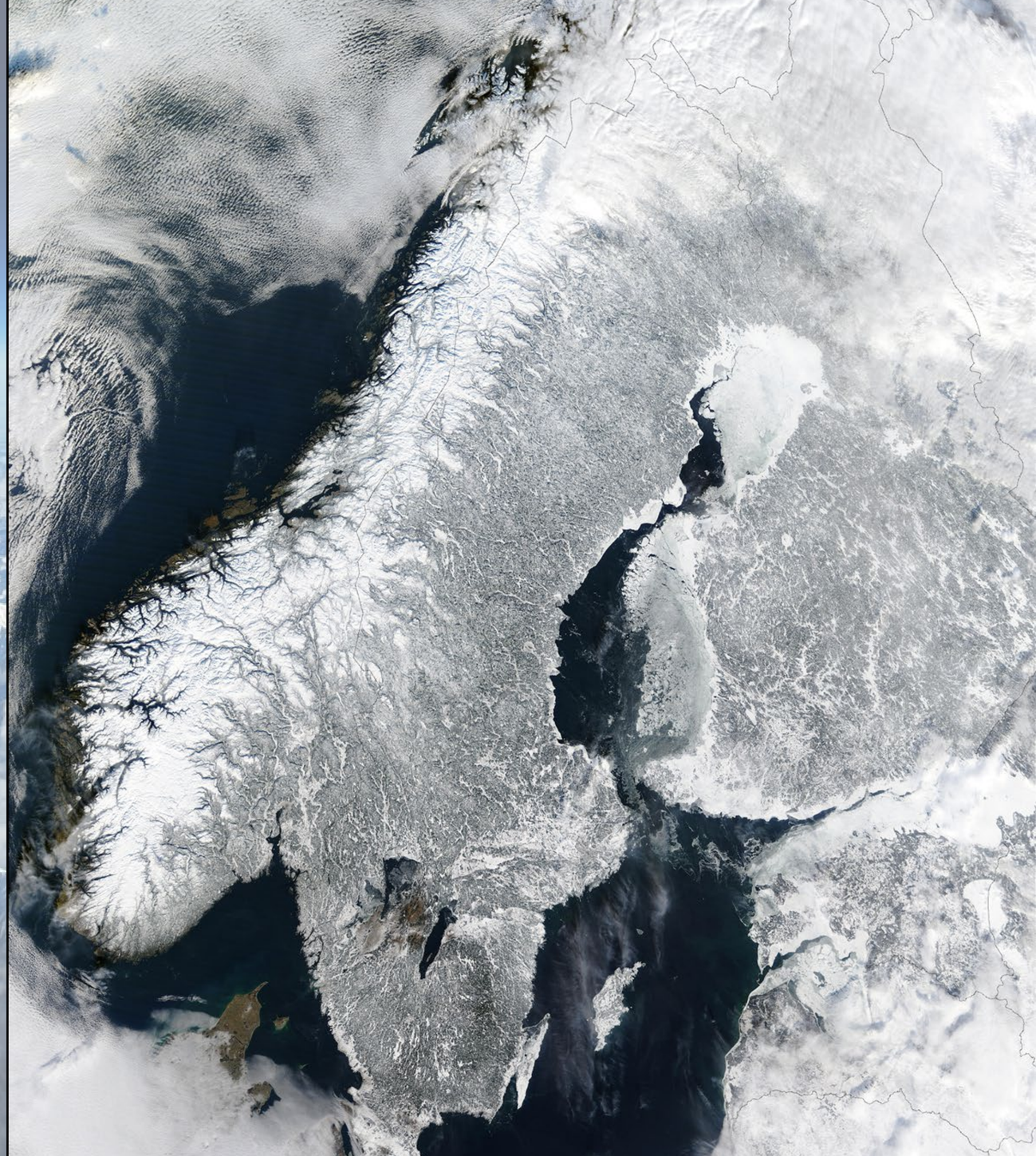
Meaning →

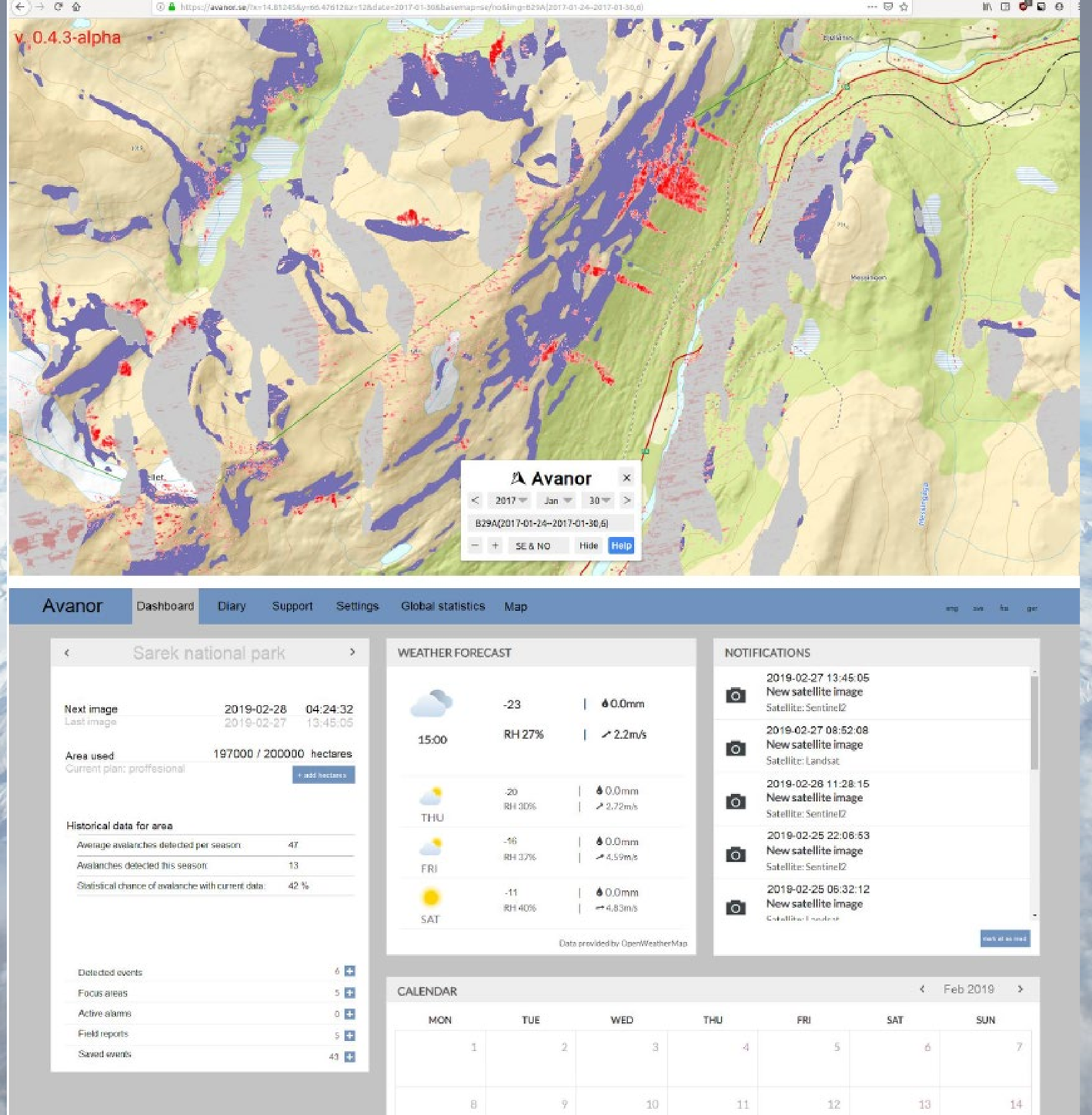
  - Costly
  - Time consuming
  - Good knowledge about prioritized areas

- <u>Bad knowledge about unprioritized areas</u>
  - **<u>Loss of lives</u>**

our solution

- We use space!
- Scan the ground with radar images and compare them on a day-to-day basis
- Predict avalanches without going there
- Web-application with a subscription
- **We save lives**
- **Complement to current methods**




v. 0.4.3-alpha
Avanor
2017
Jan
30
B29A(2017-01-24–2017-01-30,6)
SE & NO
Hide
Help
Avanor
Dashboard
Diary
Support
Settings
Global statistics
Map
Sarek national park
Next image 2019-02-28 04:24:32
Last image 2019-02-27 13:45:05
Area used 197000 / 200000 hectares
Current plan: proffesional
+ add hectares
Historical data for area
Average avalanches detected per season 47
Avalanches detected this season 13
Statistical chance of avalanche with current data: 42 %
Detected events 6
Focus areas 5
Active alarms 0
Field reports 5
Saved events 43
WEATHER FORECAST
15:00 -23 0.0mm RH 27% 2.2m/s
THU -20 0.0mm RH 30% 2.72m/s
FRI -16 0.0mm RH 37% 4.59m/s
SAT -11 0.0mm RH 40% 4.83m/s
Data provided by OpenWeatherMap
NOTIFICATIONS
2019-02-27 13:45:05 New satellite image Satellite: Sentinel2
2019-02-27 08:52:08 New satellite image Satellite: Landsat
2019-02-28 11:28:15 New satellite image Satellite: Sentinel2
2019-02-25 22:06:53 New satellite image Satellite: Sentinel2
2019-02-25 06:32:12 New satellite image
CALENDAR
Feb 2019
MON TUE WED THU FRI SAT SUN

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Progress during the summer:

- From technology to business opportunity
  - Business Model/ Revenue Model
- First paying customer
  - Avalanche Canada

- Customer Validation
- Market Size Estimation
- Profit Forecasting
- Product Development
- Etc,..

Independent Space Qualification

HOME SERVICES REFERENCE PROJECTS ABOUT US CAREER CONTACT

Are you sure that your product will work in space?

Mauro Rojas – Niels De graaf Laniel

WITH THE NEW SPACE MARKET COMES A NEED

- Space testing is expensive
- Space is a harsh environment
- Requires expertise
- Requires facilities

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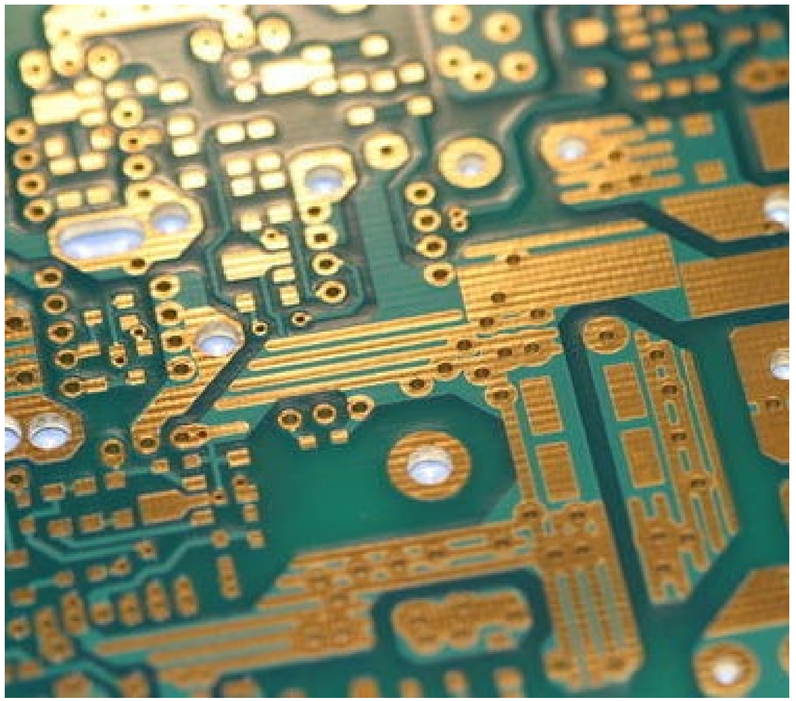
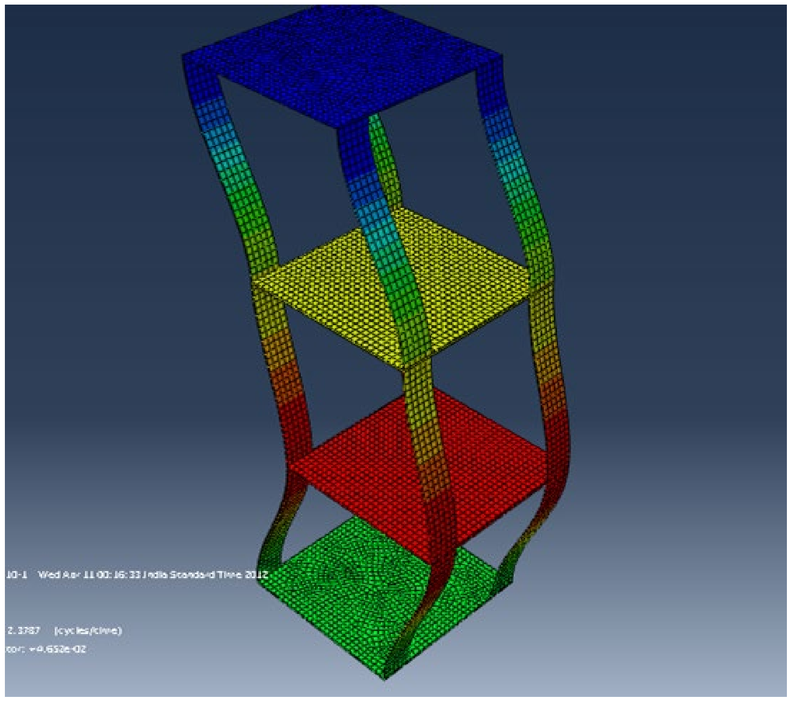




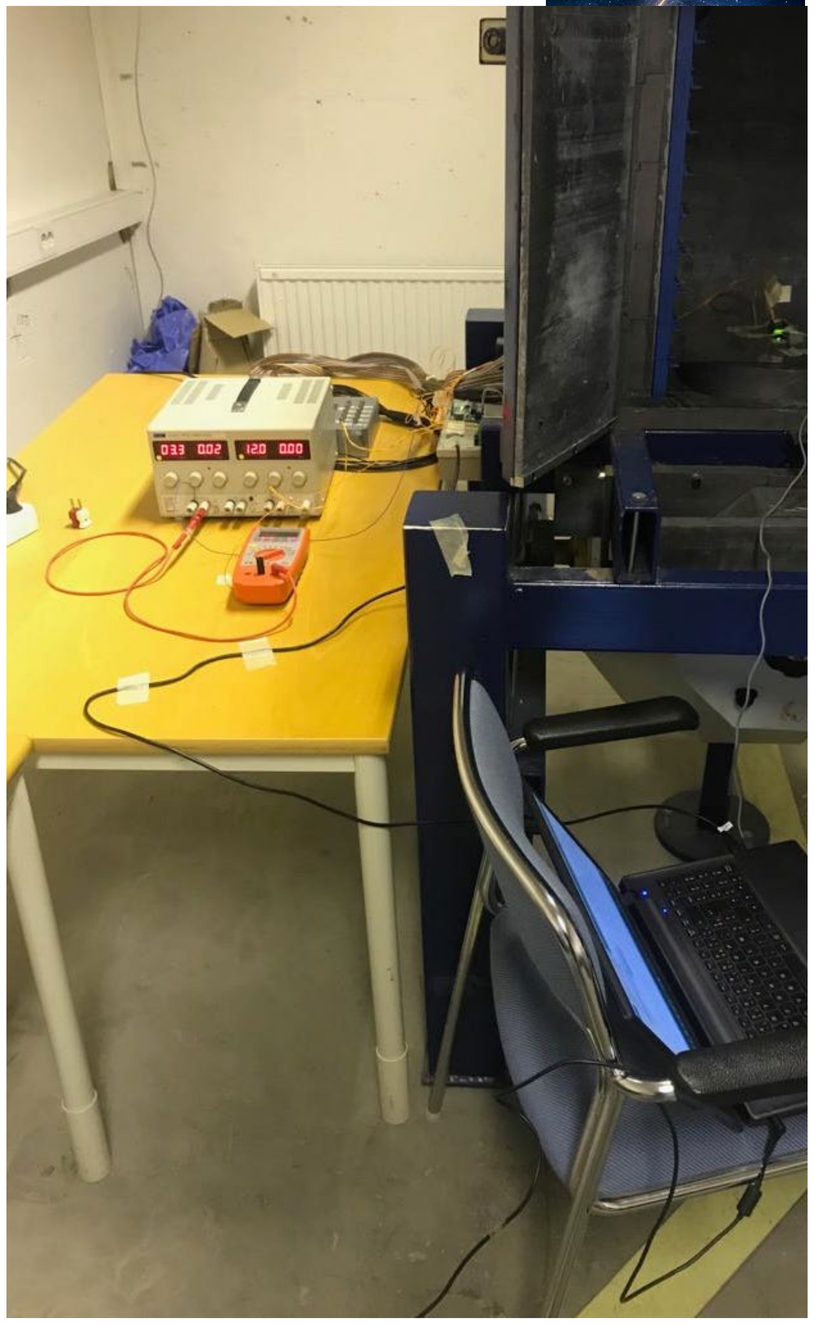
THE SOLUTION OF PASQ

THERMAL, RADIATON AND VIBRATION TEST

SPACE QUALIFICATION

PROGRESS DURING THE SUMMER:

- DEVELOPMENT AND EXCECUTION OF RADIATION TEST (PRODUCT DEVELOPMENT)
- OPTIMIZATION OF TEST PROCEDURE
- ESTABLISHEMENT OF CONTACT WITH FIRST POTENTIAL CUSTOMER FOR PASQ
- DISCOVERENCE OF MARKET NEED FOR ADDITIONAL SERVICES (test of subsystems and components)



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AURORA CASE

REBECKA SVENSSON & AYDIN NAKHAEE-ZADEH

INSTITUTET FÖR RYMDFYSIK
Swedish Institute of Space Physics

LTU BUSINESS AB

THE CASE

- IRF have made lots of research on Aurora
- How can they present this data to the general public?
- Create some kind of business opportonity based on this data?

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BUSINESS MODEL

PROBLEM/SOLUTION

PROBLEM

(End-User Perspective)

AURORA is unpredictable for short and long term

Good places to spot AURORA are hard to locate

Aurora forecast not correlated with other data

Current methods are based on unreliable data (KP-value)

SOLUTION

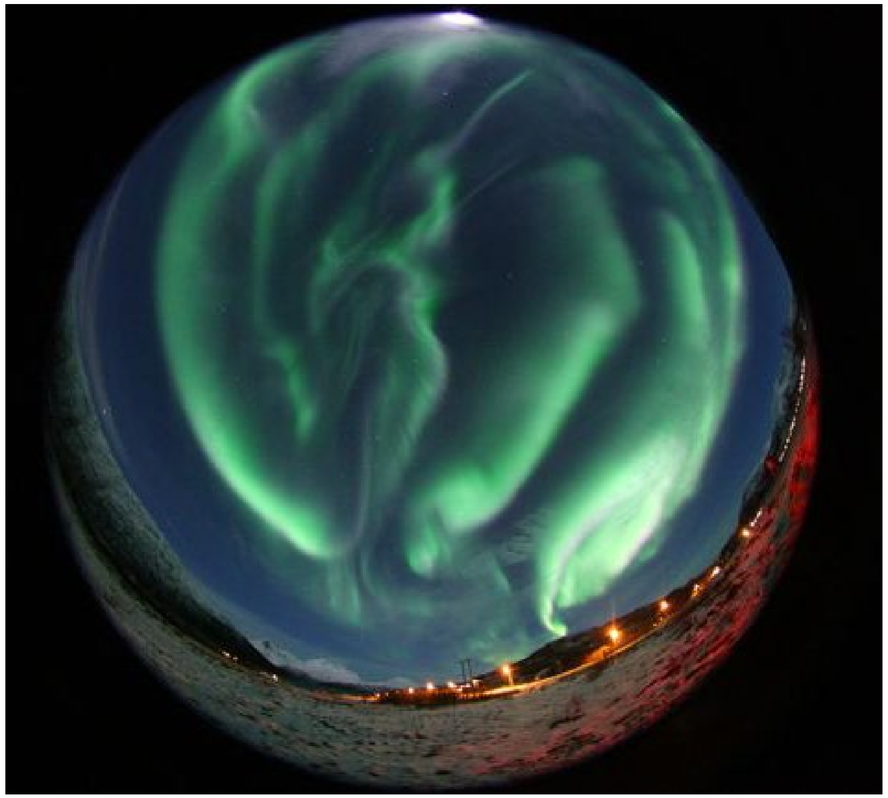
API that weather apps can use to present Aurora forecasts

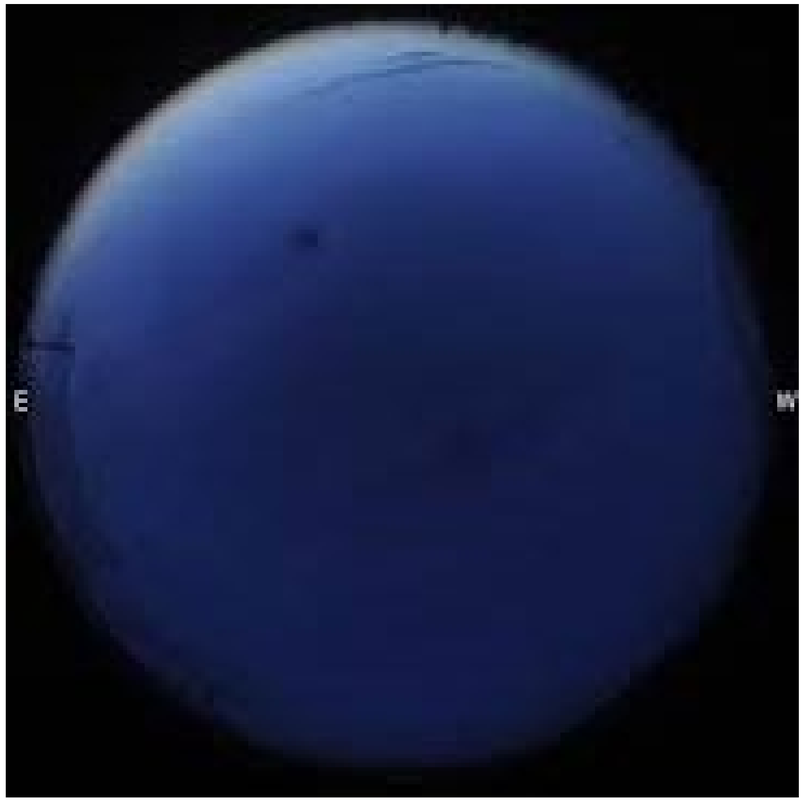
Aurora application that will be avaliable on Appstore, and Google Play

BENEFITS

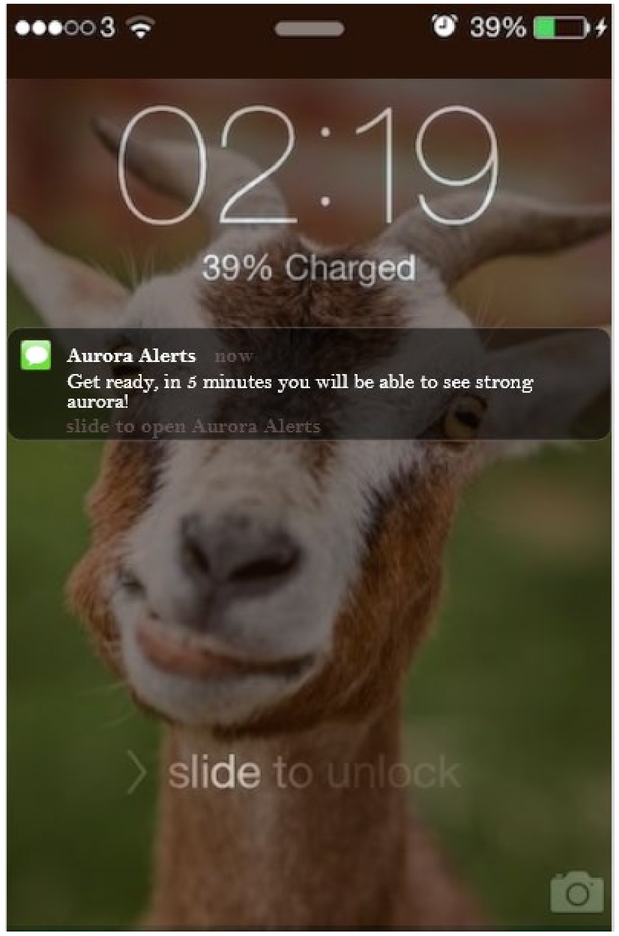
5-minute aurora alerts
Long-term aurora forecasts
Local data instead of KP-value
Presented togheter with weather data

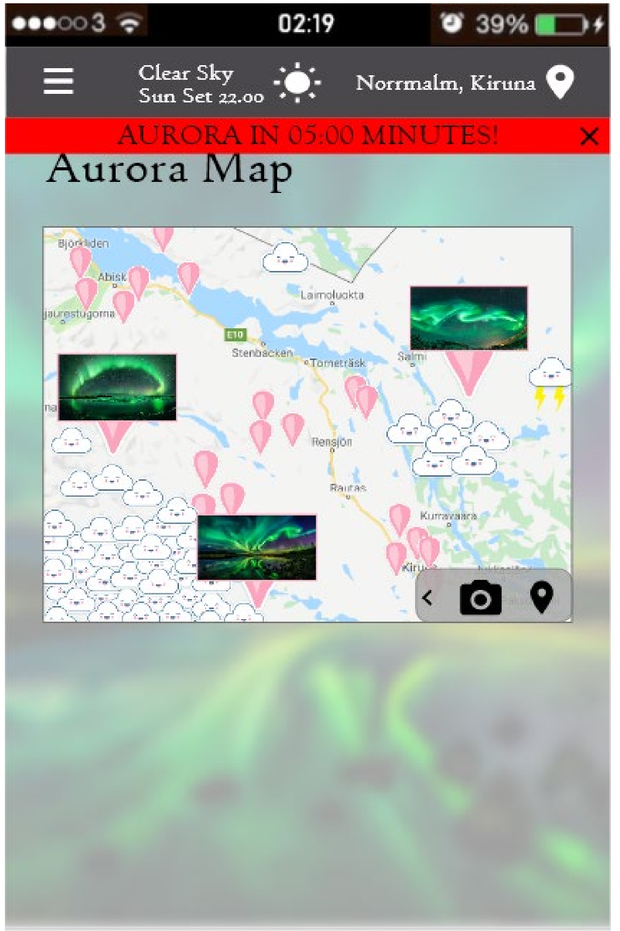
Both these pictures show high KP-value



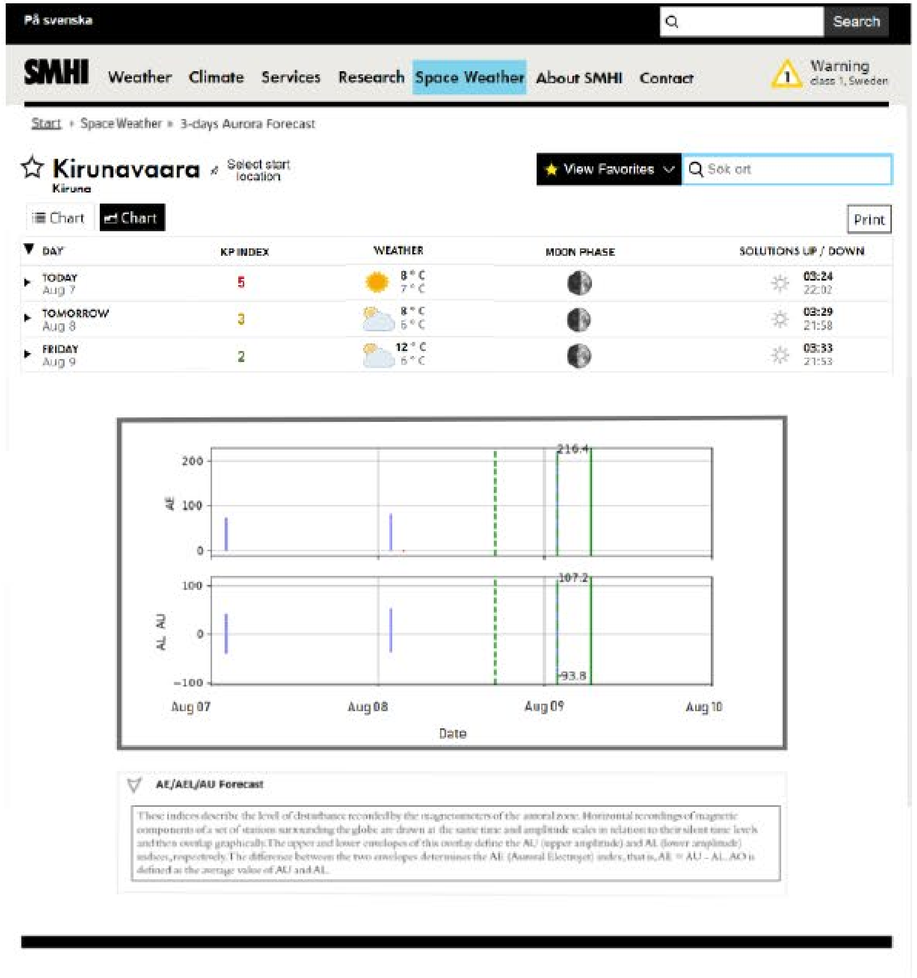


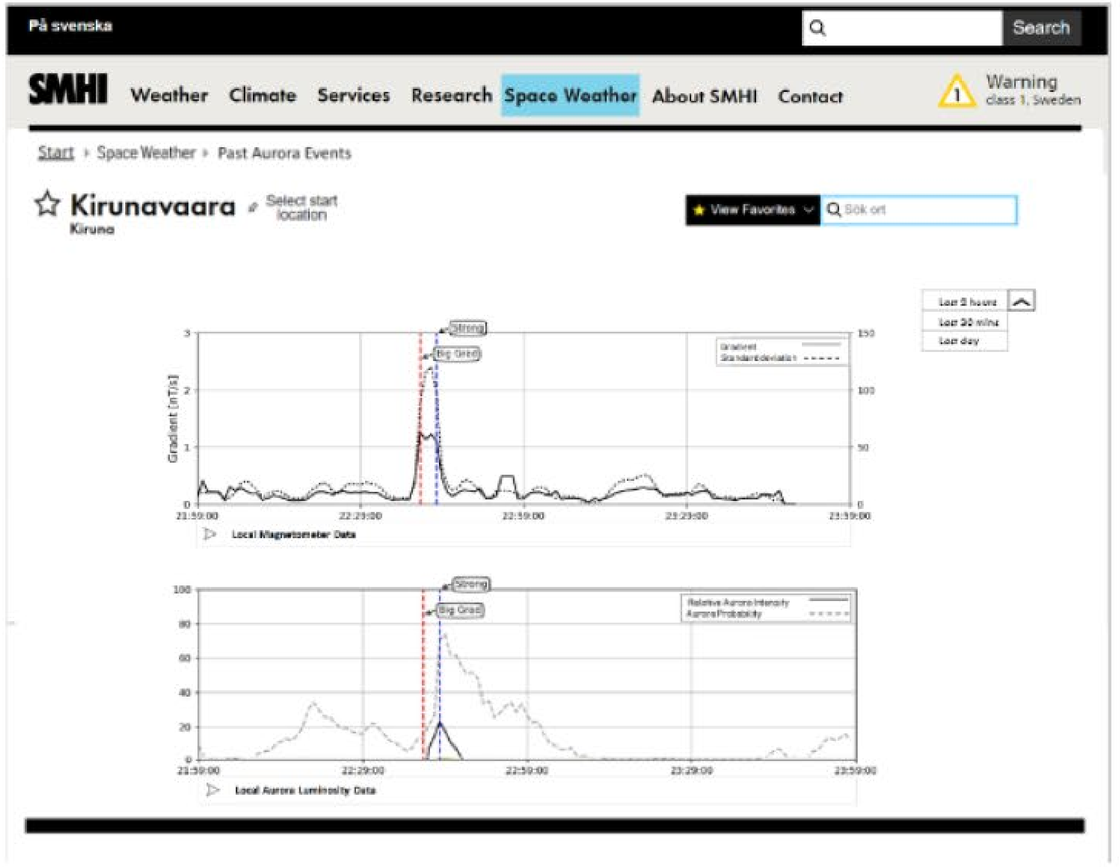
A LOOK INTO THE APP





A LOOK INTO THE API





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PROGRESS DURING THE SUMMER:

- DEVELOPMENT OF BUSINESS IDEA
- VALIDATION OF BUSINESS IDEA
- BUSINESS MODEL/ REVENUE MODEL
- ESTABLISHMENT OF CONTACT WITH FIRST POTENTIAL CUSTOMER (SMHI)
- MARKET SIZE ESTIMATION
- PROFIT FORECASTING
- ETC.

- IRF NOW HAVE A VALIDATED BUSINESS IDEA WITH A FIRST POTENTIAL CUSTOMER - READY TO LAUNCH


THANK YOU
SPACE INNOVATION GROWTH COOPERATION