

# Lessons learned from Green Flyway project in Sweden and Norway

Anne Sörensson Project manager



# About Green Flyway 1.0

- Support from Interreg, Region Jämtland and Trøndelags Fylke
- Project owners: City of Östersunds in Sweden and Røros in Norway
- November 2019 - September 2022.
- 14,2 miljoner SEK + 5,5 NOK.

## Objects:

- Create an international testarena for electric flights and autonomous aircraft in Östersund och Røros connected to an air space corridor between the cities cross border
- Investigate air space control for autonomous aircraft
- Develop a plan for how electric operation can work best and safely together with regular operations at the airports in Røros and Östersund
- Investigate the conditions and work to introduce short routes for electric flights
- Spread knowledge

th



# Focus on lessons learnt from Green Flyways IRL autonomus drone tests on both side of the border in Sweden and Norway



# Green Flyway Testarena i Östersund Sweden



# Green Flyway Testarena Röros Norway



# Project results drone tests Norway

Scandinavian´s first:

- Transport of corona samples by drone with autonomous technology to Tine laboratory in Trondheim by drone with autonomous technology.

The worlds first;

- Transport of milk samples to laboratory in Trondheim by drone with autonomous tehcnology

## Drones delivering dairy? TINE testing drone use for lab milk samples

By Jim Cornall

31-Jan-2022 - Last updated on 31-Jan-2022 at 10:58 GMT



TINE has tested transporting milk samples to the laboratory by drone. Pic: TINE

RELATED TAGS: Tine, Dairy, Drone delivery

TOPIC RELATED SPONSORED LINK

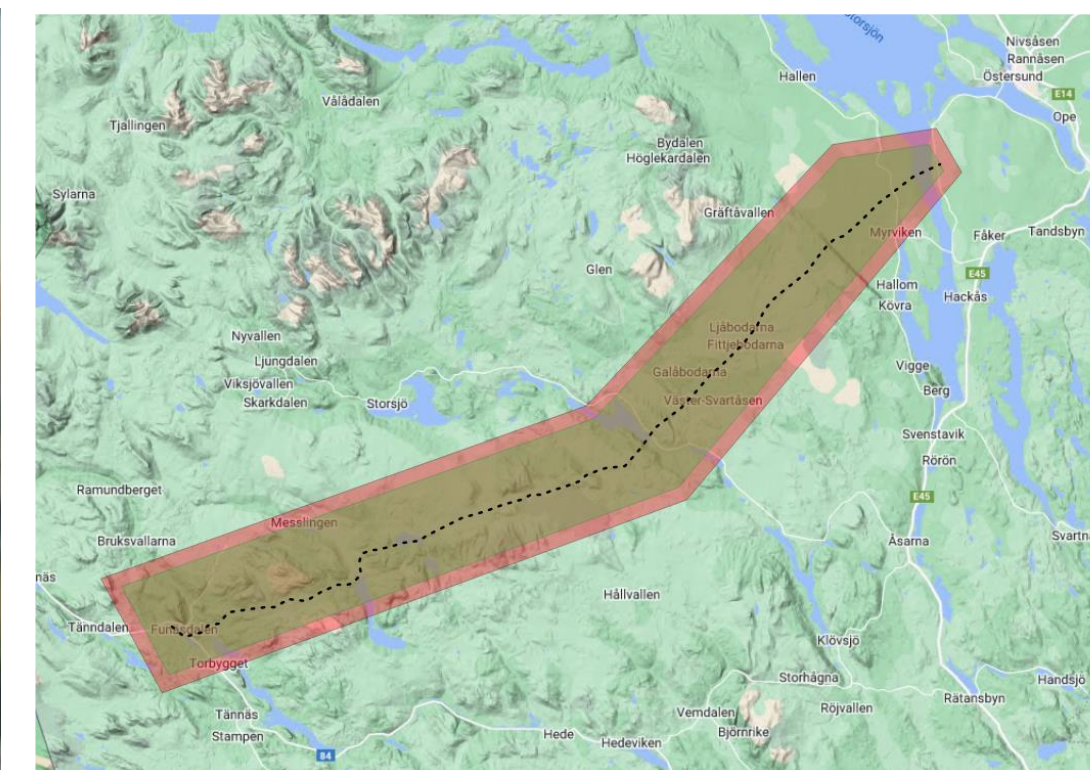
2022 NutraIngredients-USA Awards | Do you have an INGREDIENT or FINISHED PRODUCT that be a Nutrition Star? SUBMIT YOUR ENTRY before March 28 →... [Click here](#)

This winter, Norwegian dairy company TINE has tested drone transport of milk samples from Haltdalen near Røros to the laboratory at the dairy in Heimdal.

The company said in the future, even milk delivery to homes could possibly be done by drones.

# Autonomous dronetransports with bloodtests

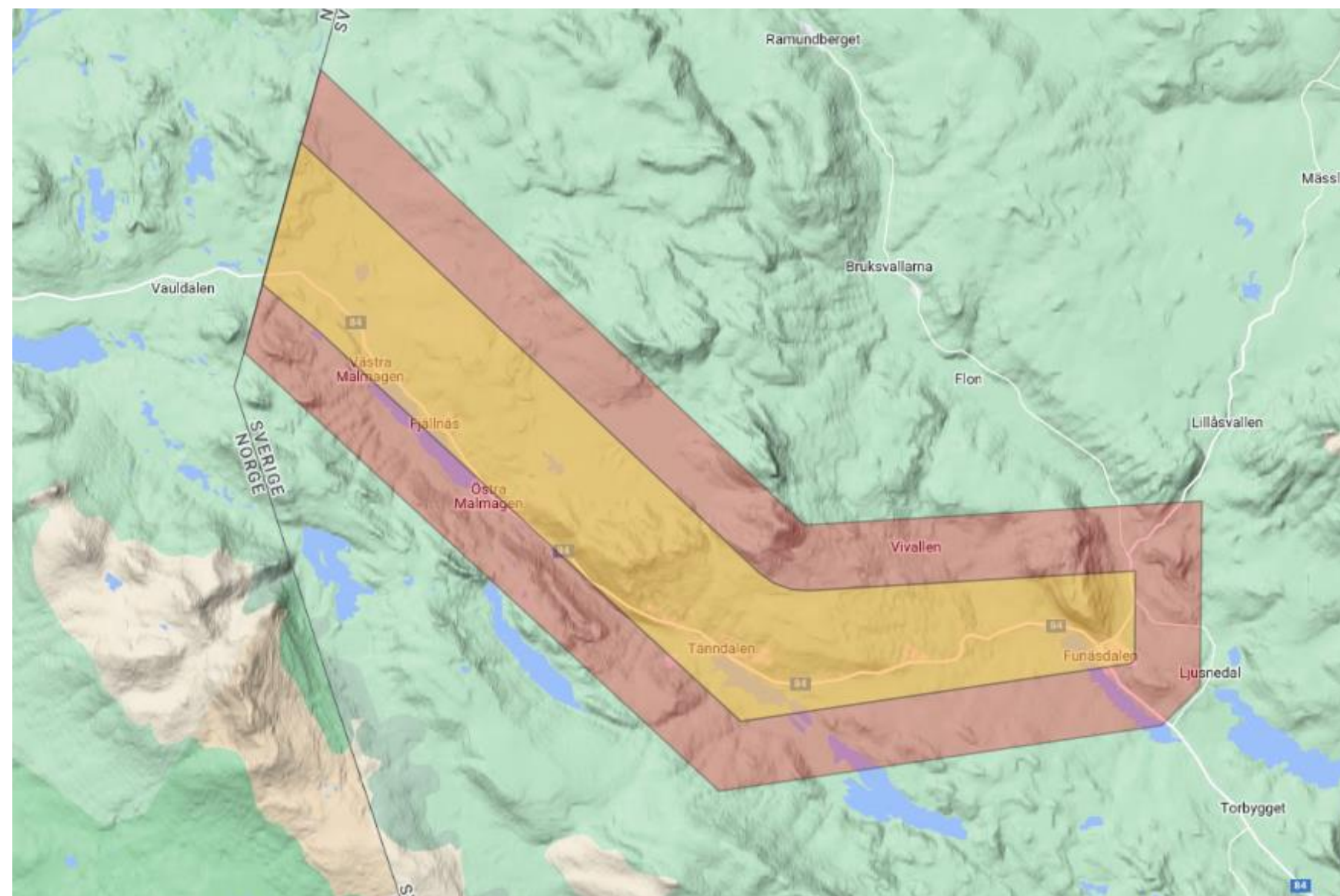
- 2021 -11 Funäsdalen Health Center to laboratory in Östersund. Aviant 45 flights november-december.
- Funäsdalen-Orrlanda 128 km. Mobile coverage 4 G ok.
- Restriction area forbidden for other aircrafts = Conflicts. Solved by flying in evening.
- U-space better and safer solution.
- Aviants drone coped with most winter weather types except heavy wind.
- Analyse of blood – no difference from car transport. Halved transport time.



# Project results cross border

2022-04 Cross border by Aviants drone from Funäsdalen in Sweden to Röros in Norway.

- Coordination; Green Flyway, Luftfartstilsyn, LfV, Transportstyrelsen, Avinor, Swedavia, Tollmyndigheten, Tullverket, Telenor, Telia.
- Worked fine no problems with coverage.
- Challenge permissions and no rules.
- U-space better and safer. Need to be tested if different systems in Sweden and Norway.



Unik grensekryssing:

## Sjekket av tollere



Tollvesenet stilte mannsterkt opp for å inspisere dronen etter landing. Foto: Iver Waldahl Lillegjære.

I dag tidlig skjedde en unik grensekryssing mellom Sverige og Norge. Behørig sjekket av tollerne etter landing.

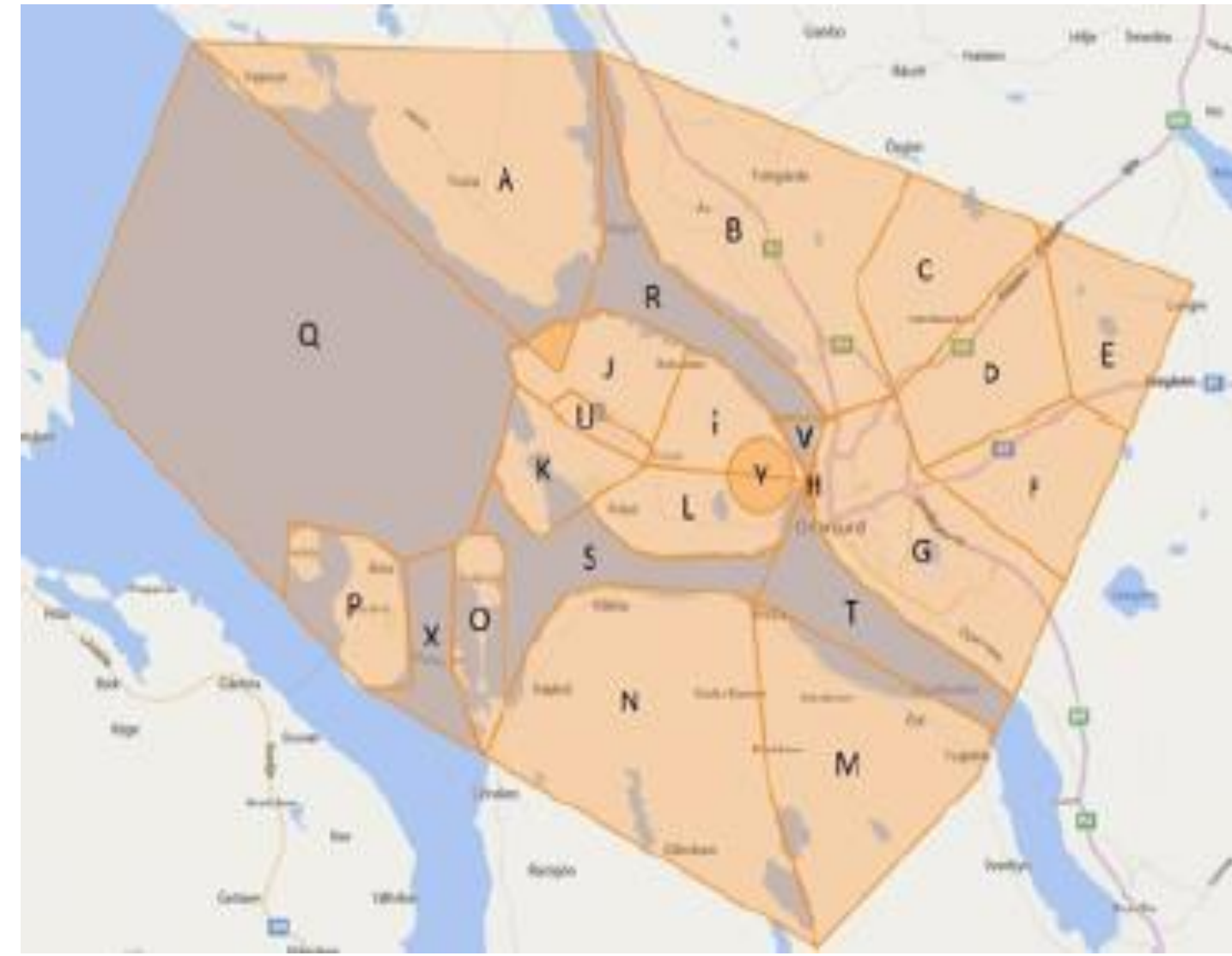
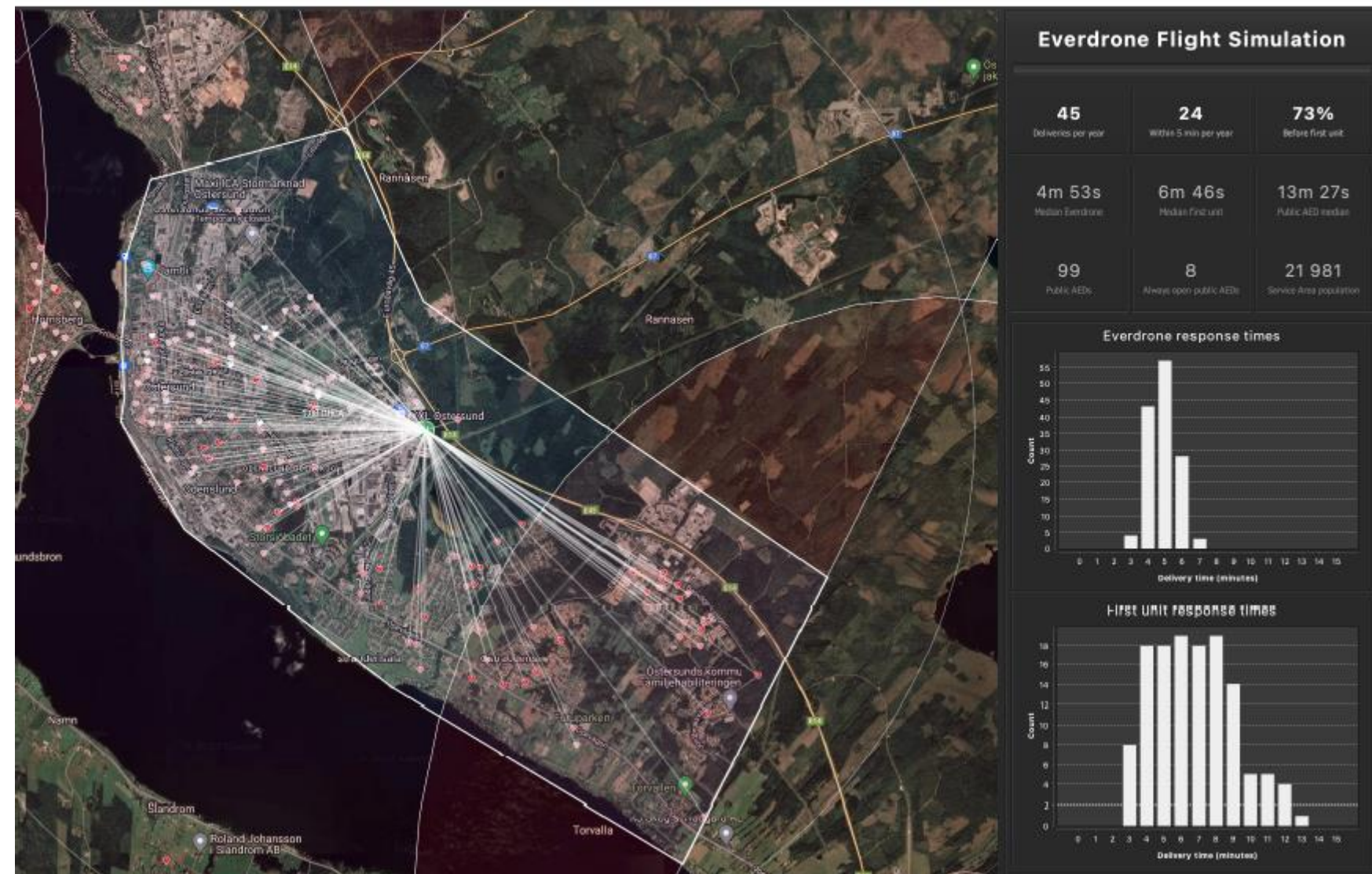
Iver Waldahl Lillegjære

Publisert: 20.05.2022 kl 11:50 Sist oppdatert: 20.05.2022 kl 11:52

# Defibrillators transported by drones

Everdrones mobile drone center inaugurated in city of Östersund 2022-03-01. Cooperation between Everdrone, Berners, Rescue center, The Region, SOS Alarm and Karolinska Institutet.

Analys av slutgiltig placering:



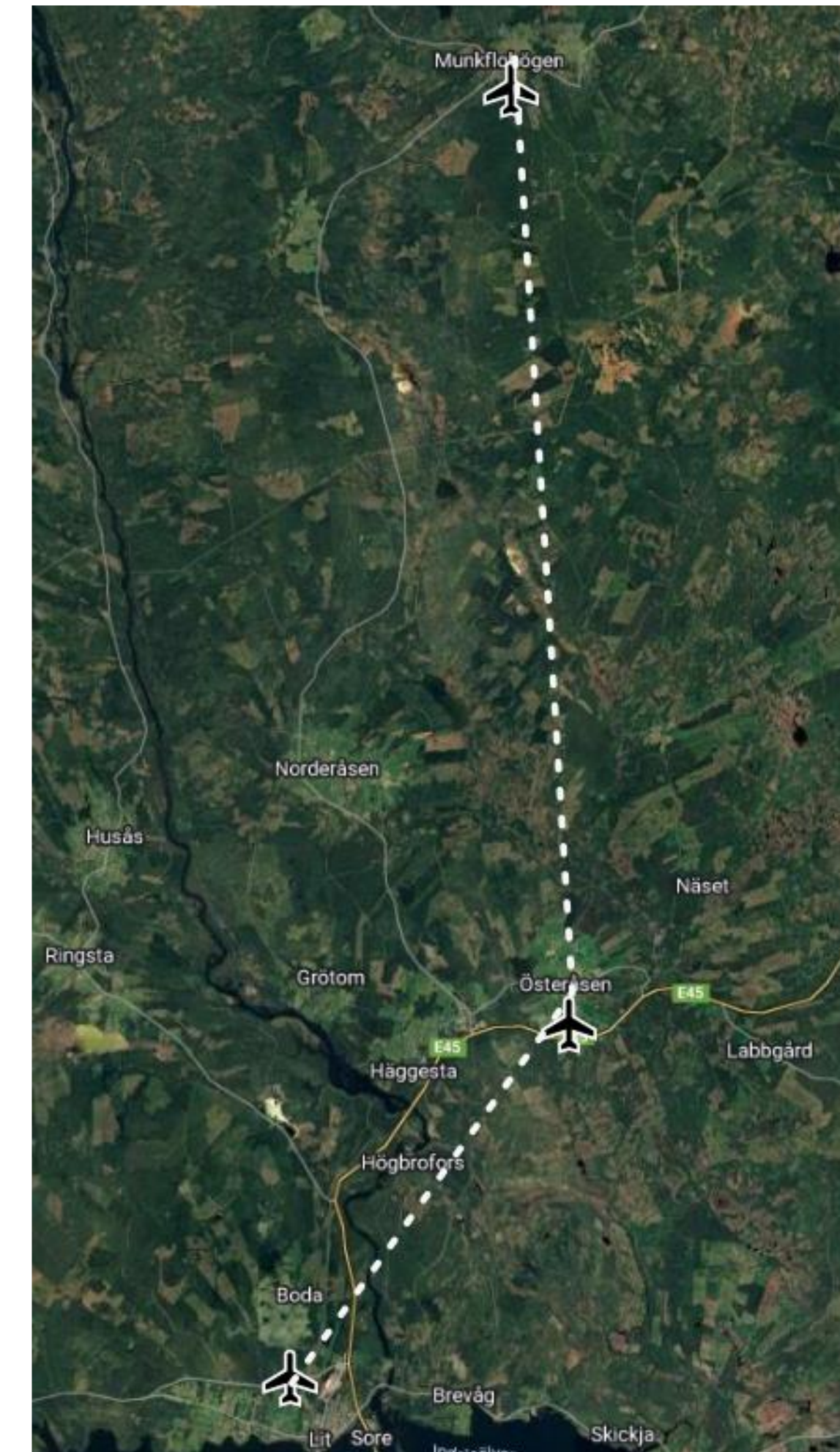
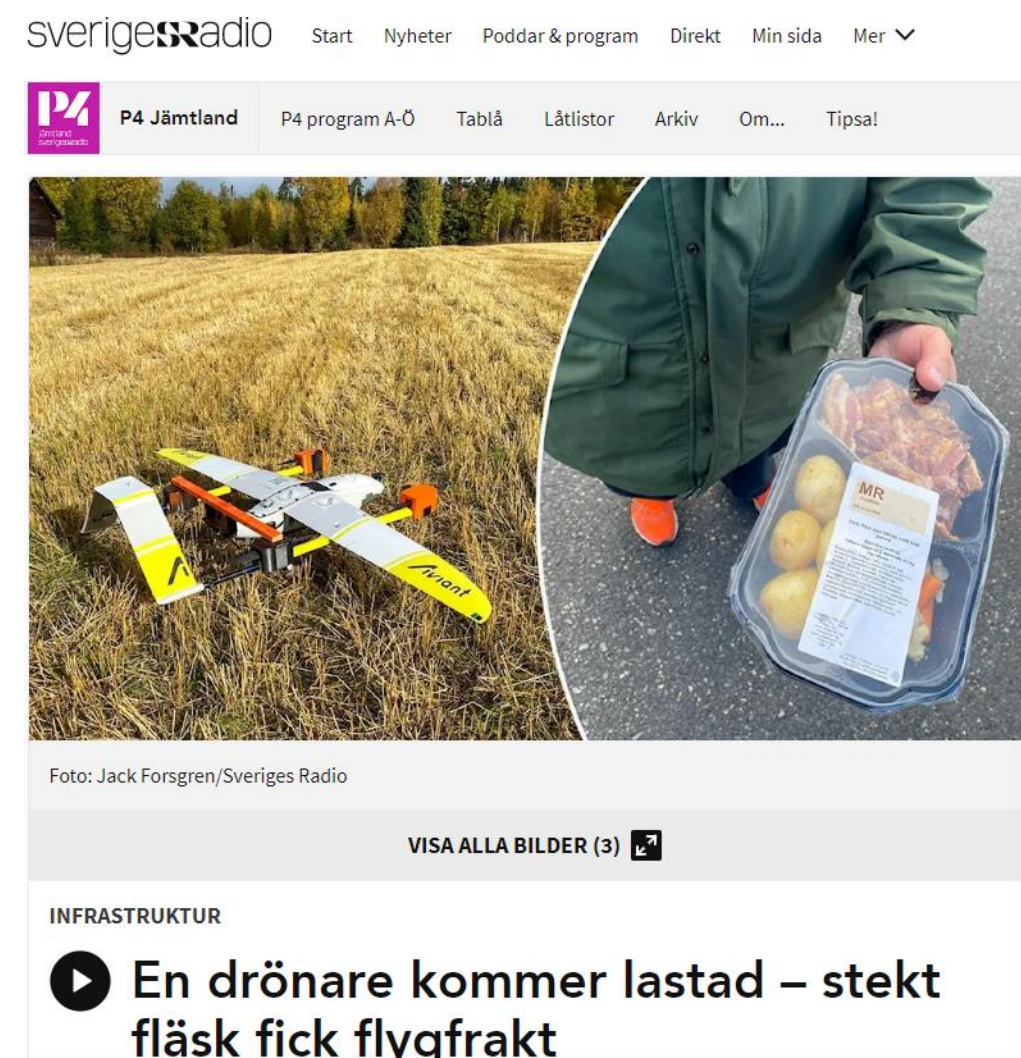
- Works fine with short response times.
- Challenges; No permission to start when airport is closed.
- At the moment. Application for a trial period for D-area submitted to the Swedish Transport Agency might solve the problem now.
- U-space better and safer solution.

# Results Autonomous dronetests with food and medicin

2022-09 Food transports from Lit – Österåsen and Munkflohögen

2022-09 Medicin Östersund – Lit – blood tests – Östersund

- Worked fine.
- Challenge: Air space permits close the airspace to other aircrafts
- U-space better and safer.



# Project results test UTM

2022-06-07 IRL-test of Astra UTM-system with three drones.

- The system worked excellent.





**Thanks for your attention!**  
**Reports from the drone flights on**  
**[www.greenflyway.se](http://www.greenflyway.se)**