

Integration of drones in Norwegian SAR operations

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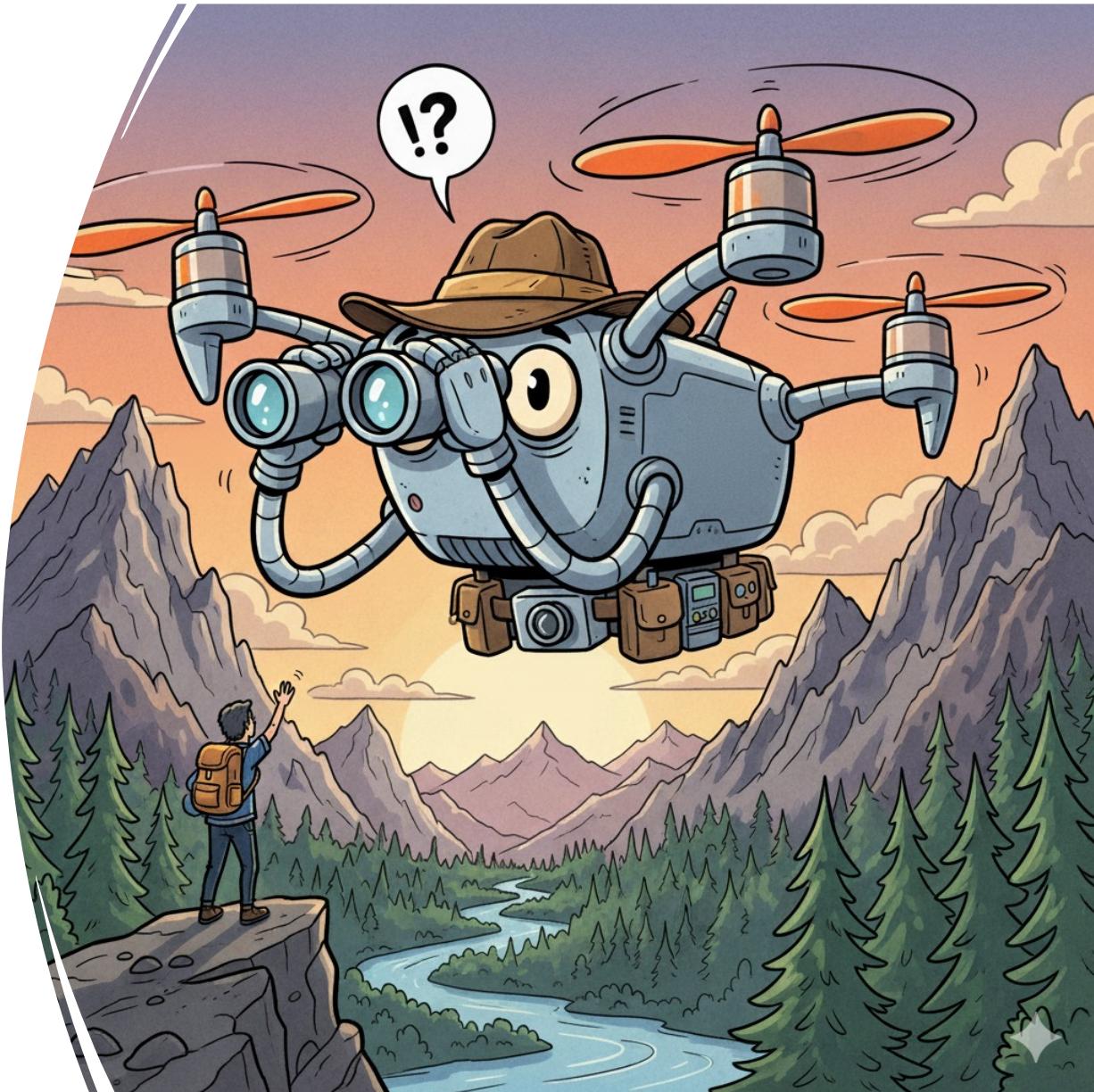
Norwegian Red Cross



Norwegian People's Aid

Outline

- ❖ **The Norwegian SAR System**
Actors and Organization
- ❖ **From Pioneers to Professionalization**
Evolution of Drone Use
- ❖ **Trust and Common Procedures**
The Key to Successful Collaboration
- ❖ **Safe Airspace Sharing**
Criteria for Operating with Manned Aviation
- ❖ **Search and Locate Methods**
Effective Drone Techniques



History lesson

- ❖ Started out with good ideas and enthusiast → pioneers (~2012)
- ❖ Hobbyists using their competence in new ways – eager to contribute!
- ❖ Not many suitable drones commercially available
- ❖ Regulations were a bit unclear
 - ❖ First systematic regulation from 2016

11ordlys

Om oss eAvis Nord24 Sport Nordnorsk Debatt Annonsering

Nyheter

Søker etter Per med modellfly



<https://folkehjelp.no/nyheter/droner-suverent-supplement>

<https://www.nordlys.no/nyheter/soker-etter-per-med-modellfly/s/1-79-6106346>

History lesson

- ❖ New laws from 2016 putting demands for operators and documentation
- ❖ Local initiatives → Bigger organizations
- ❖ Better and more available equipment
- ❖ Governmental use of drones (police) from 2019



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Why drones?

- ❖ Eyes in the skies
- ❖ Access remote and unavailable places
- ❖ Reduce risk for personal
- ❖ Capable of putting sensors in strategic places
- ❖ Possible to utilize sensors in new ways
- ❖ Existing technology

Norway

- ❖ Stretches 1800km from South to North
- ❖ Only 5,5million inhabitants

= a lot of free space to fly drones

Also, a lot of rural places with less access to helicopters.

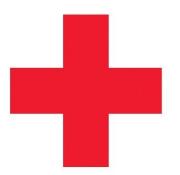


<https://thetruesize.com/>

Actors and organization

(among the various actors, these are the most common)

VOLUNTEERS



6000 (300)



2000 (70)



250 (10)

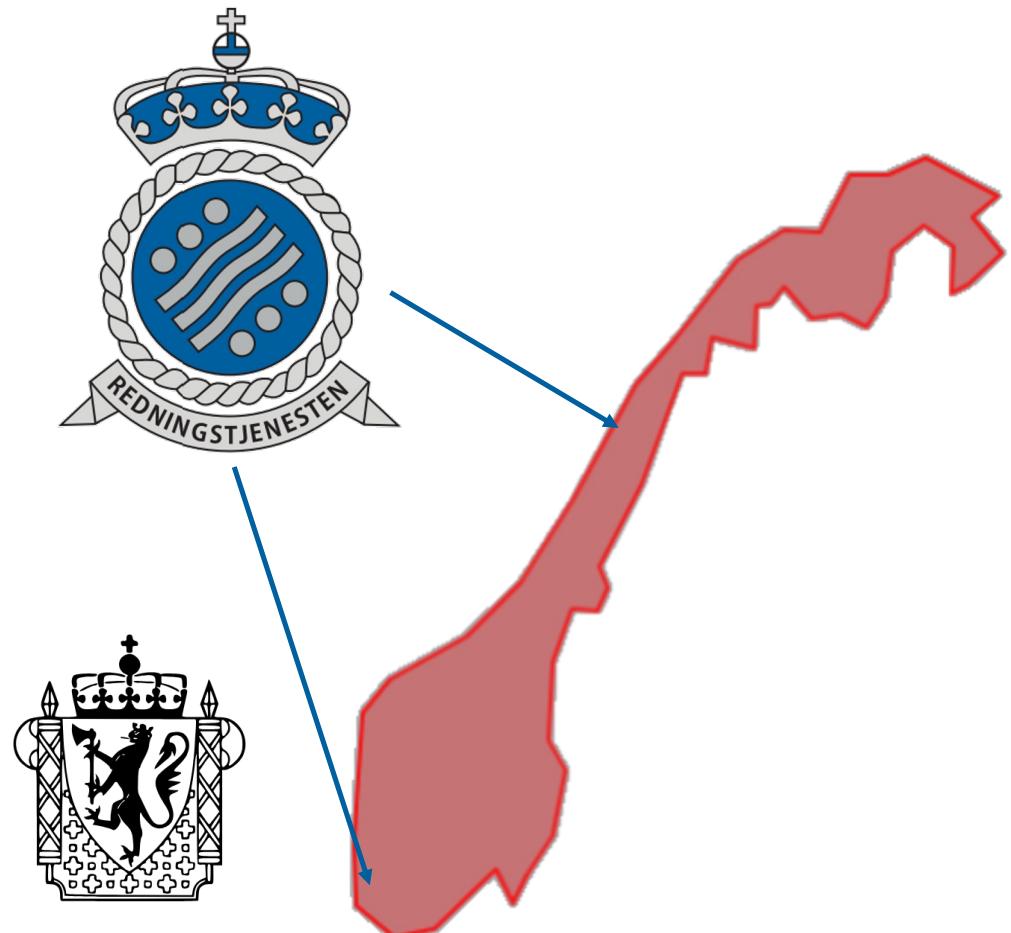


450 dogs



1600 (58)

HELICOPTERS



Actors and organisation

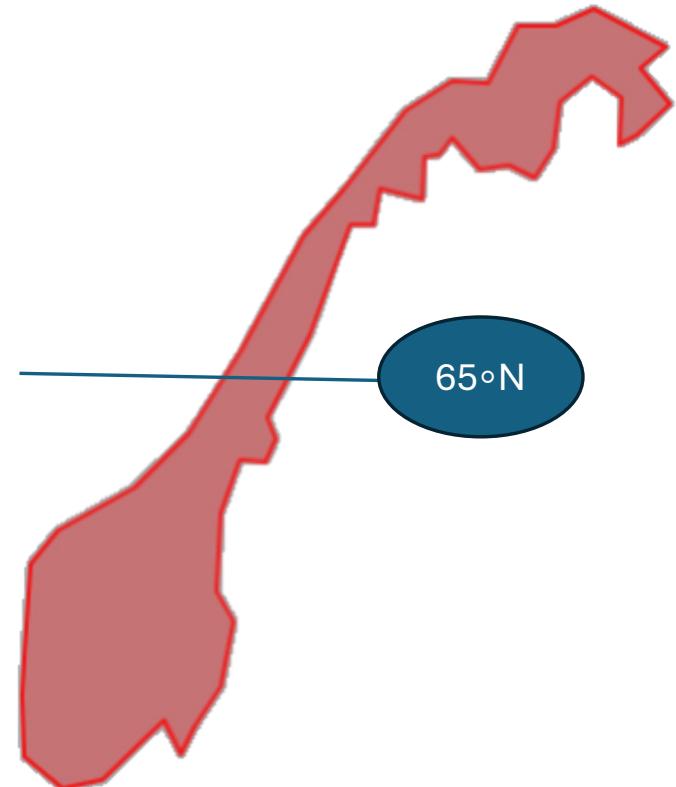
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Hovedredningssentralen - JRCC
(Joint Rescue Coordination Centre)
has the overall operational responsibility
during search and rescue operations



The police
Runs rescue sub centers
Acts as On Scene Coordinator (OSC)



Need for coordination

- ❖ JRCC identified the need for coordination (2020):
 - ❖ *The rampant development in recent years within unmanned aviation and drone technology, with continuously new areas of use, has caused several of the actors within the rescue service to start their own projects to be able to utilize various operational concepts with drones within their areas of activity (....) It is very important to urgently get suitable cooperation procedures developed for the use of drones in the rescue service, both within operational coordination and to establish safe simultaneous operation with other air resources. (....)*
- ❖ Gathered all relevant actors to a collaboration forum “Luftforum”
 - ❖ Common procedures making
 - ❖ Information and knowledge sharing

National guidelines for the coordination of air resources in the rescue service

Main points:

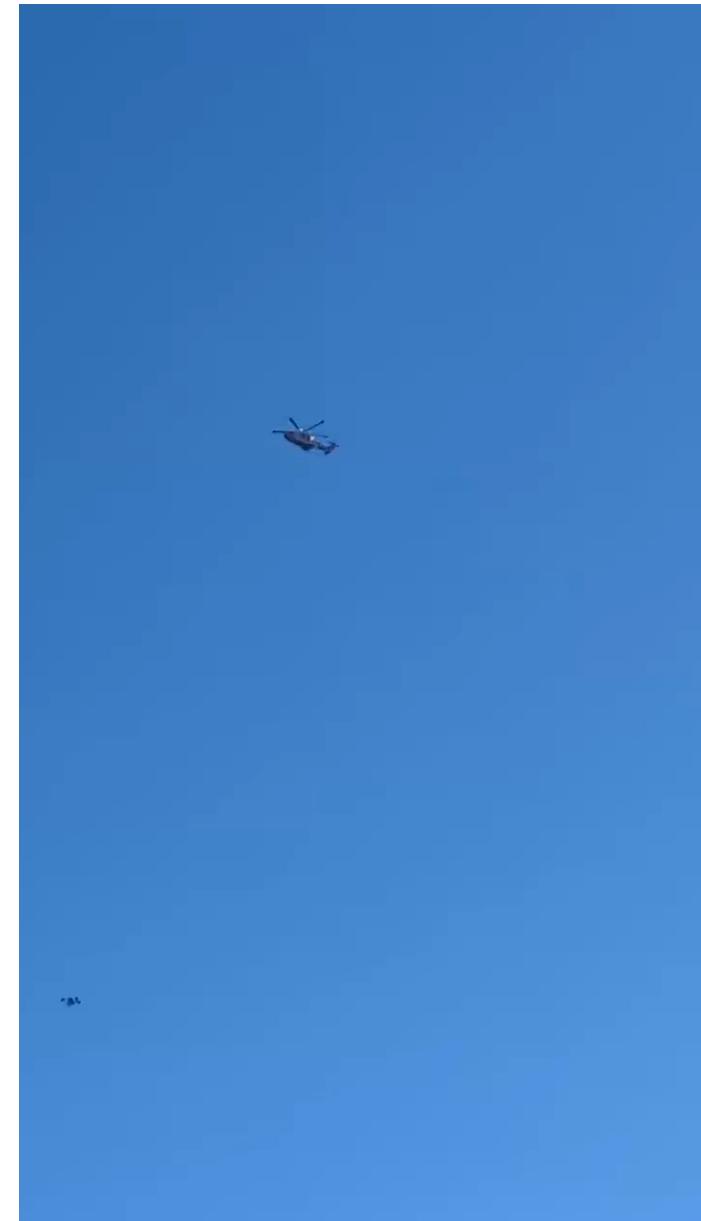
- ❖ Before flying in an operational area, the JRCC must be contacted for information sharing
- ❖ Before entering the operational area, two-way communication and a plan for separation must be established
 - ❖ Both the volunteer and professional services uses the same national communication network (Nødnett).
 - ❖ Separation by time, geographic area, routes or altitude
- ❖ All operations with drones are published in a dedicated information system “HemsWX” (developed by NLA)
- ❖ In joint operations with manned aviation, the unmanned crew must have the capability to monitor ADS-B traffic.



<https://www.hovedredningssentralen.no/wp-content/uploads/2025/03/NY-Nasjonale-retningslinjer-for-koordinering-av-luftressurser-i-redningstjenesten.pdf>

Why did we succeed?

- ❖ Common understanding that we are one unit with a common goal, despite the color of our uniforms.
 - ❖ Makes information sharing a lot simpler
- ❖ A will and a need to agree on procedures
- ❖ The organizations have built trust in each other
- ❖ We had or developed the tools needed



Sharing is the key

Leaflet on the implemented search methods, patterns and procedures.

Translated to English, just for you <3



bit.ly/dronesar





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