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# Is a RPA missing part of the common operational picture?

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# The answer is:

- Maybe - but still some concerns..

## Why?

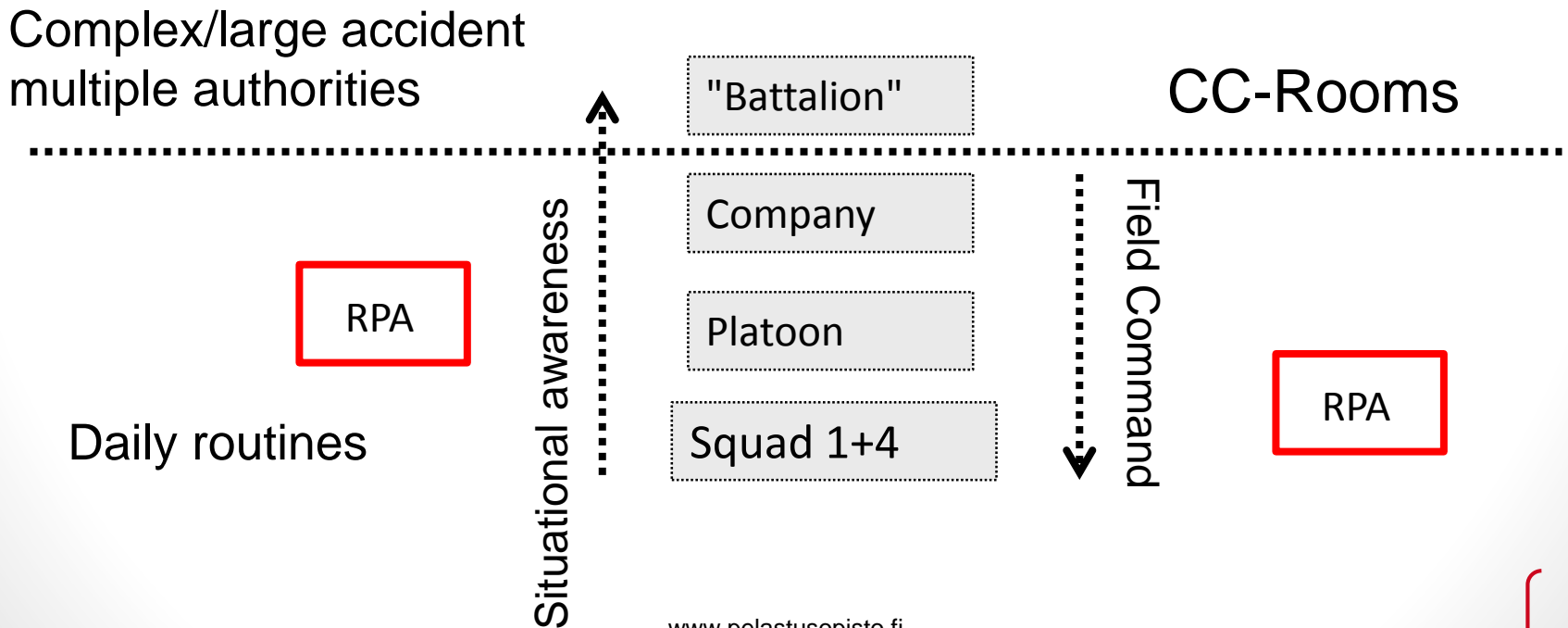
≡  <sup>AT</sup> Top 100 Drone Crash Fail Win compilation 2016

**Are we talking about toys or  
serious tools?**



# Background of operative system in Finland

- **Rescue Services Field Organization of 4 levels:**





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# Operative situations



**Rajavartiolaitos**  
Gränsbevakningsväsendet  
The Finnish Border Guard





Fire engines



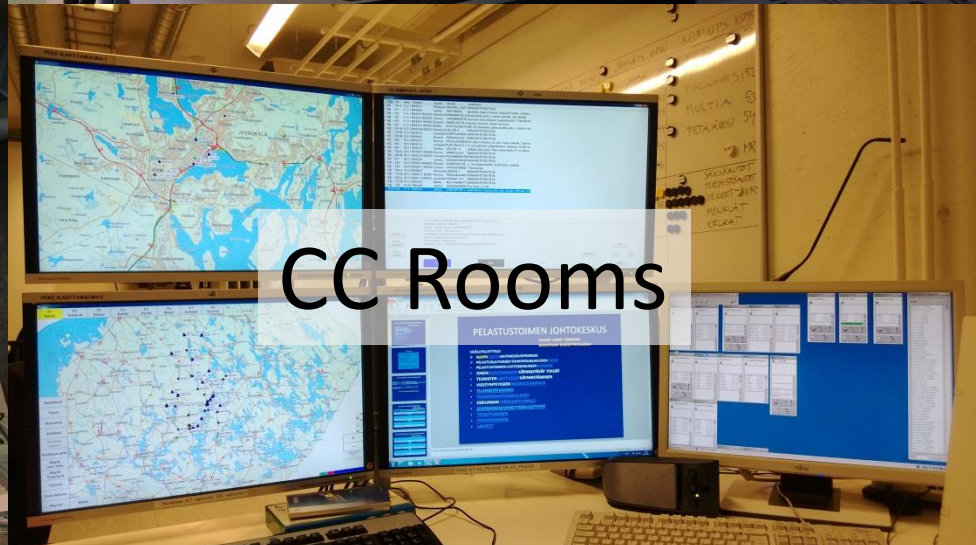
Ambulances



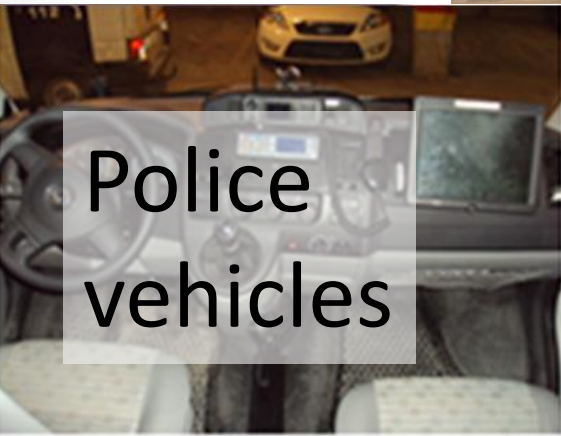
Field Commanders



Border Patrols



CC Rooms



Police vehicles

# Technical environments



# RPAS Regulation in Finland

- Finnish Aviation Authority (TRAFI) regulation:
  - TRAFI/4482/03.04.00.00/2015 (OPS M1-32)
    - Regulations & Standards for RPA usage
    - The obligation to notify RPA & user information to TRAFI
    - Obligatory to maintain Flight logbook (3 year history)
    - Obligatory accident reporting to TRAFI
    - Only VLOS

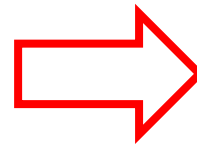
=> Framework for safe RPA usage

- Privacy regulation!



# RPA –Training at ESC

- Part of operative situation management training
  - To understand where and how RPA is to be used
  - Part of Situational awareness (interfaces...)
  - Usage of information (real time or ...)
- Focus on safety - theory first
- Common operational procedures (under development)
- Standardized equipment's
  - Maintenance
- Theory – exams
- Flight exercises & test Flights
- Continuous training (weekly)



License to use/fly

First touch...







# Key requirements For RPAS

- User friendliness – simple to use – (COTS – Price)
- Safety
- Robustness
- All environmental conditions (wind, rain, (low)temperature)
- Interfaces to CCC
- Battery lifetime => flight time
- Control link <=> flight distance
- Video link <=> real time usage distance
- Payload – variety of sensors
- User guides & Safety rules
- Standardized ...



# RPAS to whom?

- How real-time video affects on the operative field command processes in different levels of rescue service organization?
- For example in the situation where the field commander is not physically present at the area
  - Requirements for the quality of information which is needed to lead operational emergency situations.
  - The amount and quality of the information for management in disasters.



# User Needs /User Cases (examples)

- Situational information produced by real-time video to the field commander/fire officer in charge of rescue services
- Survey extent of the accident/disaster
- Survey dangerous situations (chemical, explosives, nuclear, ...)
- Search (thermal video)
- The key is to understand how to use RPAS (and real-time video) in rescue services to improve operative process
- ...
- To be more possibilities that are not yet recognized/utilized...



# Operative procedures

- Study Veneskari (2010) where to use :
  1. Wild fire
  2. Natural disaster (storm, flood, etc)
  3. Oil spill
  4. Building fire
  5. Traffic accidents
  6. Nuclear accident ...
- Right strategy to be defined
- One solution for all needs??



# Technology

- Is developing with exponential speed – should we wait?
  - Easiness
  - Price erosion
  - Agility – robustness – flight time
  - Sensors
  - Interfaces - integration
- Ambulance DRONEs



# Development continues

- Separate areas of development:
  1. Operative use cases
  2. Field management - COPs
  3. RPAS Technology
  4. CCC technology ...
- Co-operation with other users/authorities
  - Best practices
- Innovations and R&D projects
  - Research, studies
  - Small scale experimentations



# Conclusion

- RPA usage must be coordinated & controlled
- Proper and continuous training “license to use& Fly”
- Continuous development of operative usage = needs & use cases
- Development of the RPA technology is moving **fast** forward
  
- The only way to learn is to do it...

=> IT IS EASY TO USE







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Thank you!  
Questions?

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