

EKKO BirD radar & tracker using COTS marine radar

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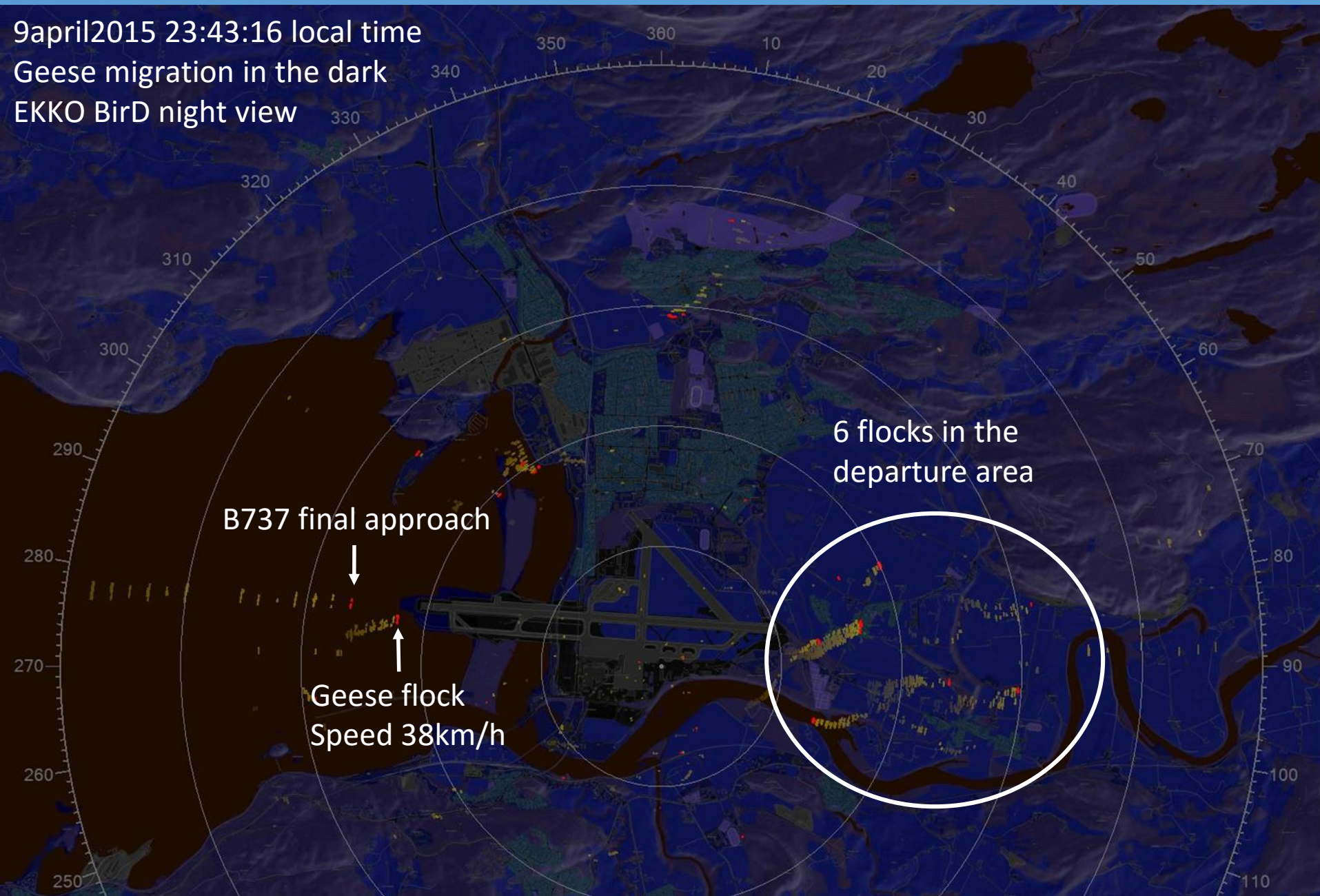
www.radian.no

EKKO BirD
Værnes

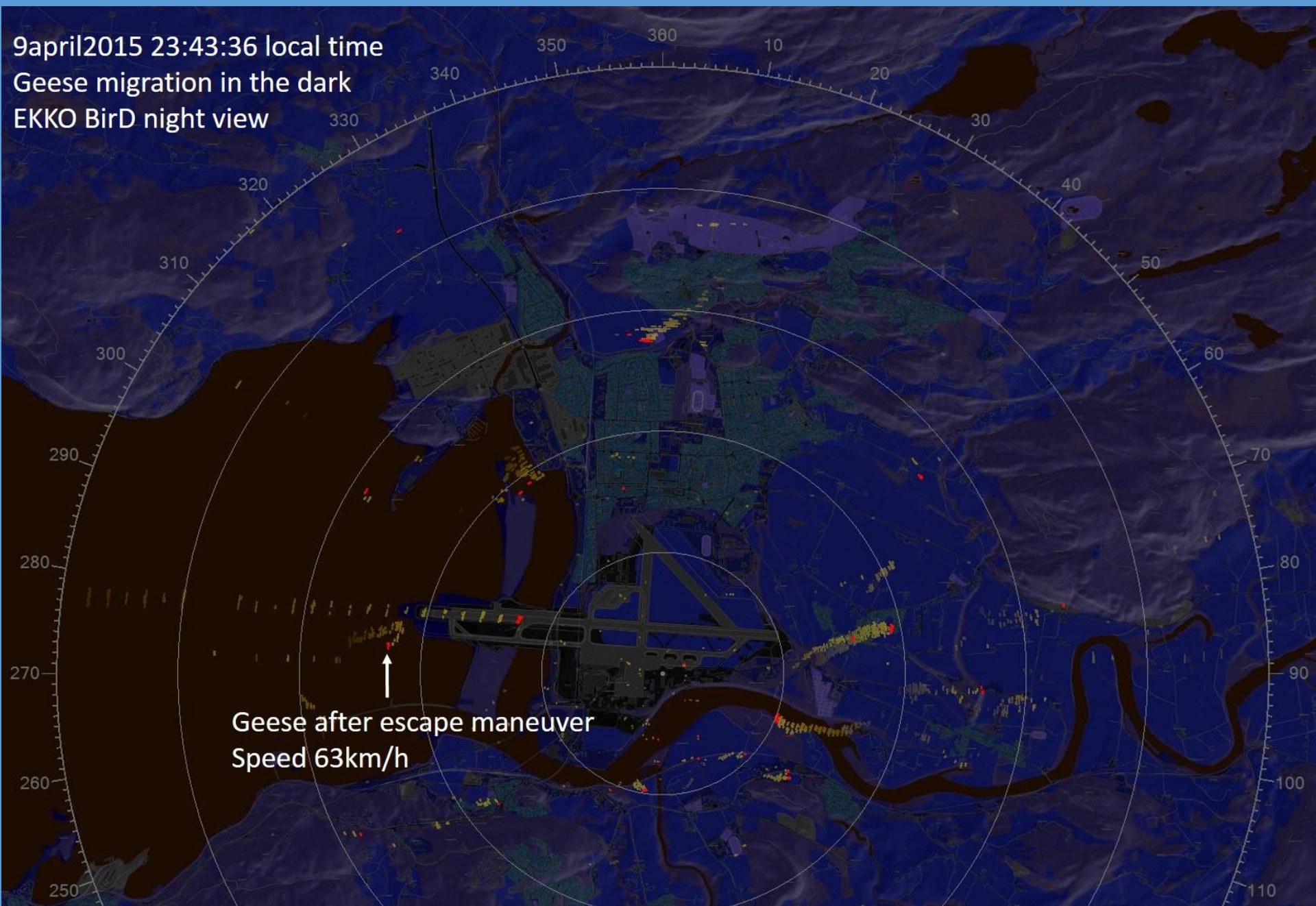
EKKO BirD - Basic features

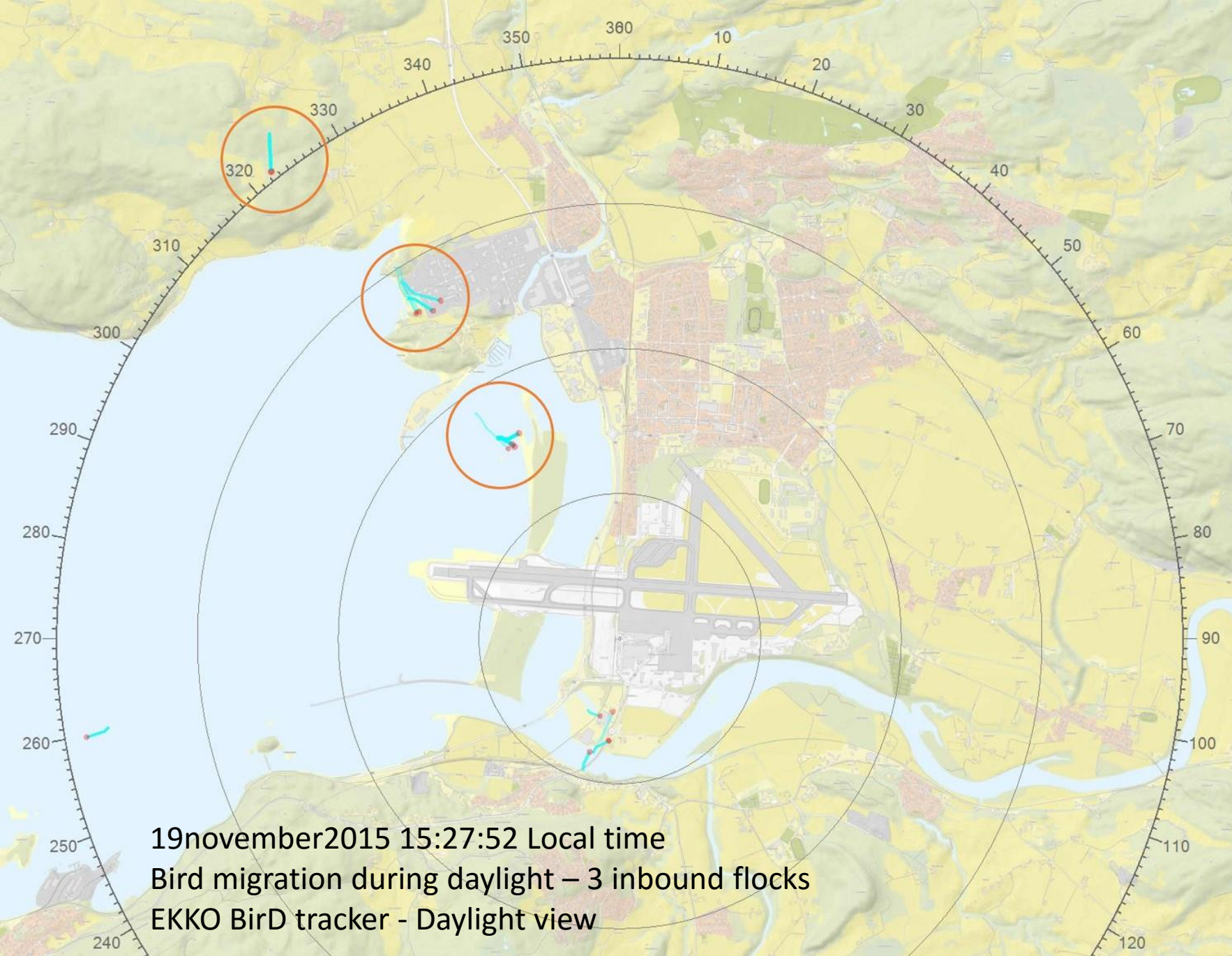
- Detect Bird flights within line of sight
- Continuous day+night surveillance
- Not sensitive to visual sight restrictions (Fog, Smoke, Sunshine)
- 5Km x 360deg = 78,5Km²coverage
- 2,12sek update rate
- Track range: single 3kg bird: 3km, 16bird flock : 6km
- 4sek real time delay
- Continuous signal recording (10,1GByte in 2015)
- Bird Tracker detects and pinpoint bird flights
- Single bird vs flock discrimination -> Trained user
- Remote real time display through local Gigabit LAN

9 april 2015 23:43:16 local time
Geese migration in the dark
EKKO BirdD night view



9 april 2015 23:43:36 local time
Geese migration in the dark
EKKO BirD night view





Lokal 19.11.2015
15:27:52

UTC 19.11.2015
14:27:52

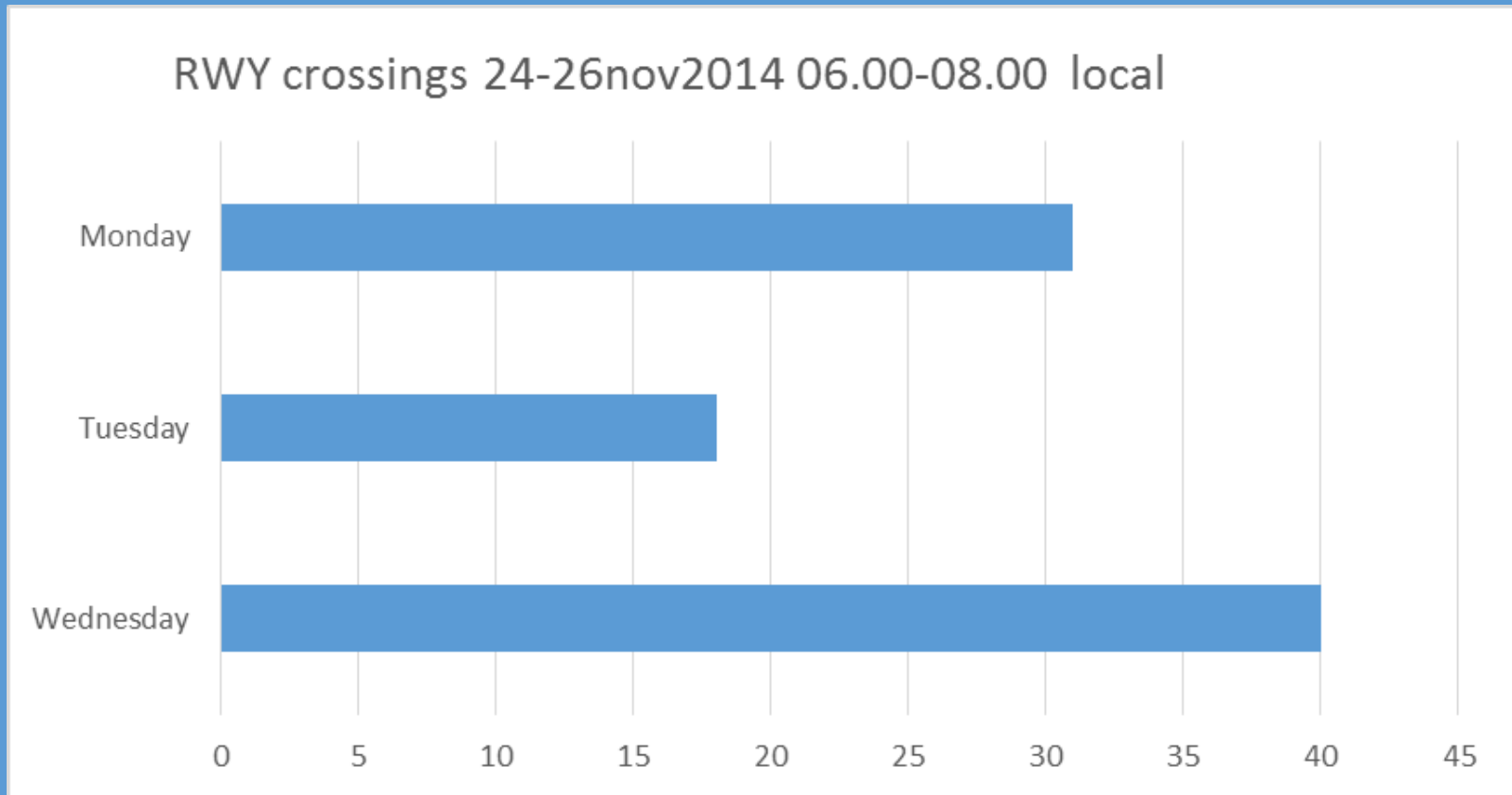
EKKO Bird
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Basic use and experience

- Improved real time bird surveillance
 - Important is large bird and flock migration during dark hours
 - Main users are TWR and bird teams
 - Info to cockpit improves pilot awareness

- Improved user learning, risk assessment and studies
 - Bird activity/migration characteristics and positions night vs day
 - Runway crossing frequency and positions
 - Evaluation of new measures/methods to avoid BS

Bird RWY crossings example

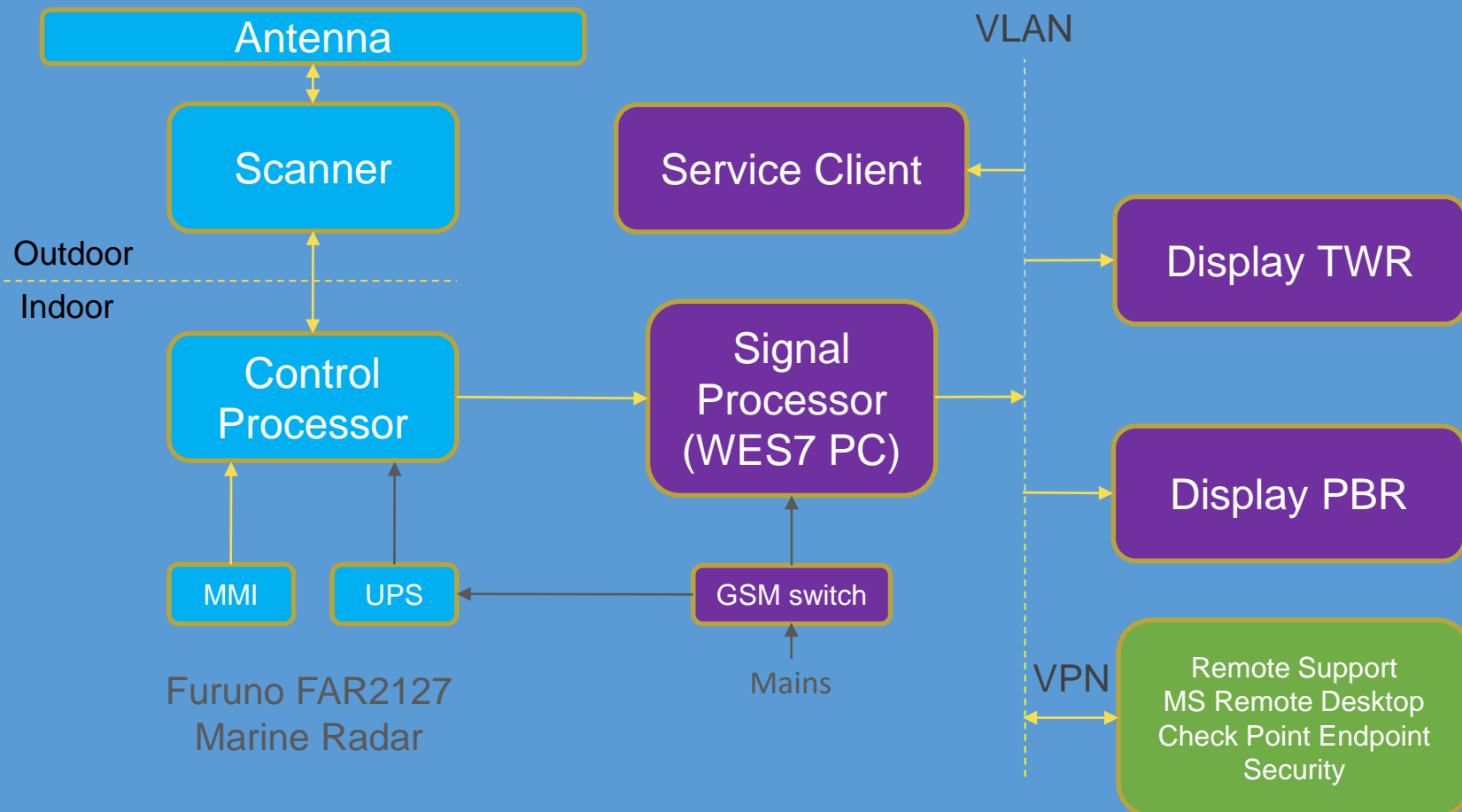


Most crossings were observed the last hour (07.00-08.00)
No crossings were observed over the RWY western end and the sea

EKKO BirD - Product Contents

- COTS Furuno marine radar – FAR2127/25KWatts
 - 54000 units sold WW since 2006 intro
- Industry standard PC components
 - User monitors – Any medium performance Win7/10 PC
 - User application including map display and bird tracker
 - Signal processor – High performance Win7 PC.
 - Dedicated PCIe radar interface card
 - Software based signal processor based on the C# high level programming language.
- Support
 - Remote support based on Microsoft Remote Desktop, LogMeIn or TeamViewer
 - Local support based on world wide Furuno service network.
 - Preventive maintenance once per year
 - 4 registered Furuno distributors on Føroyar.

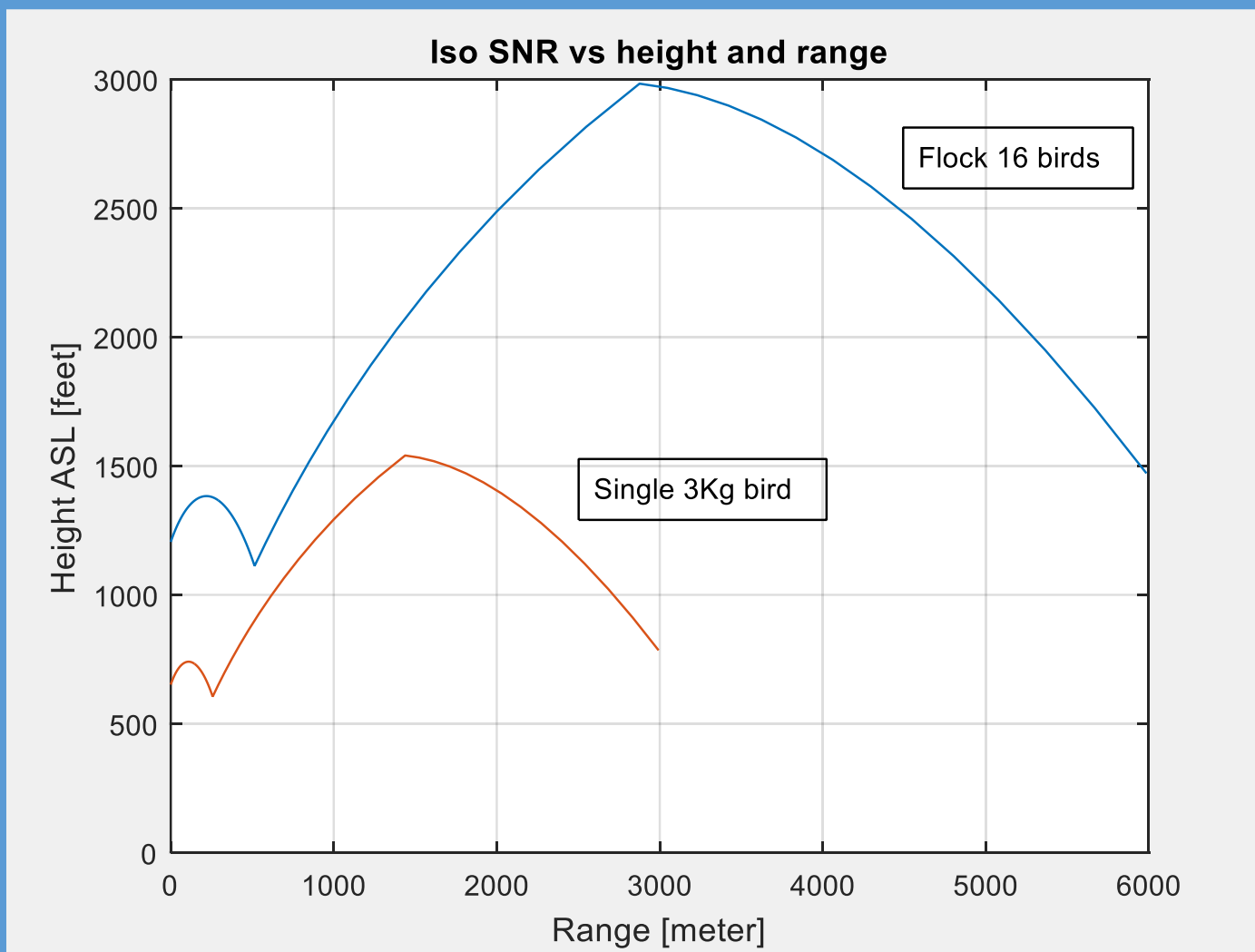
Værnes System Configuration



EKKO BirD technically

Antenna		Transmitter		System	
Length	2,55meter	PeakPow	25KWatt	Mains	220VAC 24VDC
Speed	28RPM	AveragePow	11Watt	Power-radar	160Watt
Azimuth	1deg	Pulse	150nanosec	Service	12mnd
Elevation	20deg	Frequency	9,41GHz	PC-SignProc	WES7 PC
Weight	16Kg	Range resolution	40meter	PC-Clients	Win7/10 PC/PAD
Security	6meter	Pulse rate	3000/sec		
		Weight	27Kg		

EKKO BirD - Height coverage



EKKO Mobile

EKKO BirD / Met mobile version

- Bird radar evaluation
- Bird activity/migration research
- Weather radar evaluation
- Radian R&D activities
- Mobile radar product

Compact car trailer. Box size 2,5x1,44x1,5m



4,3 meter telescopic mast

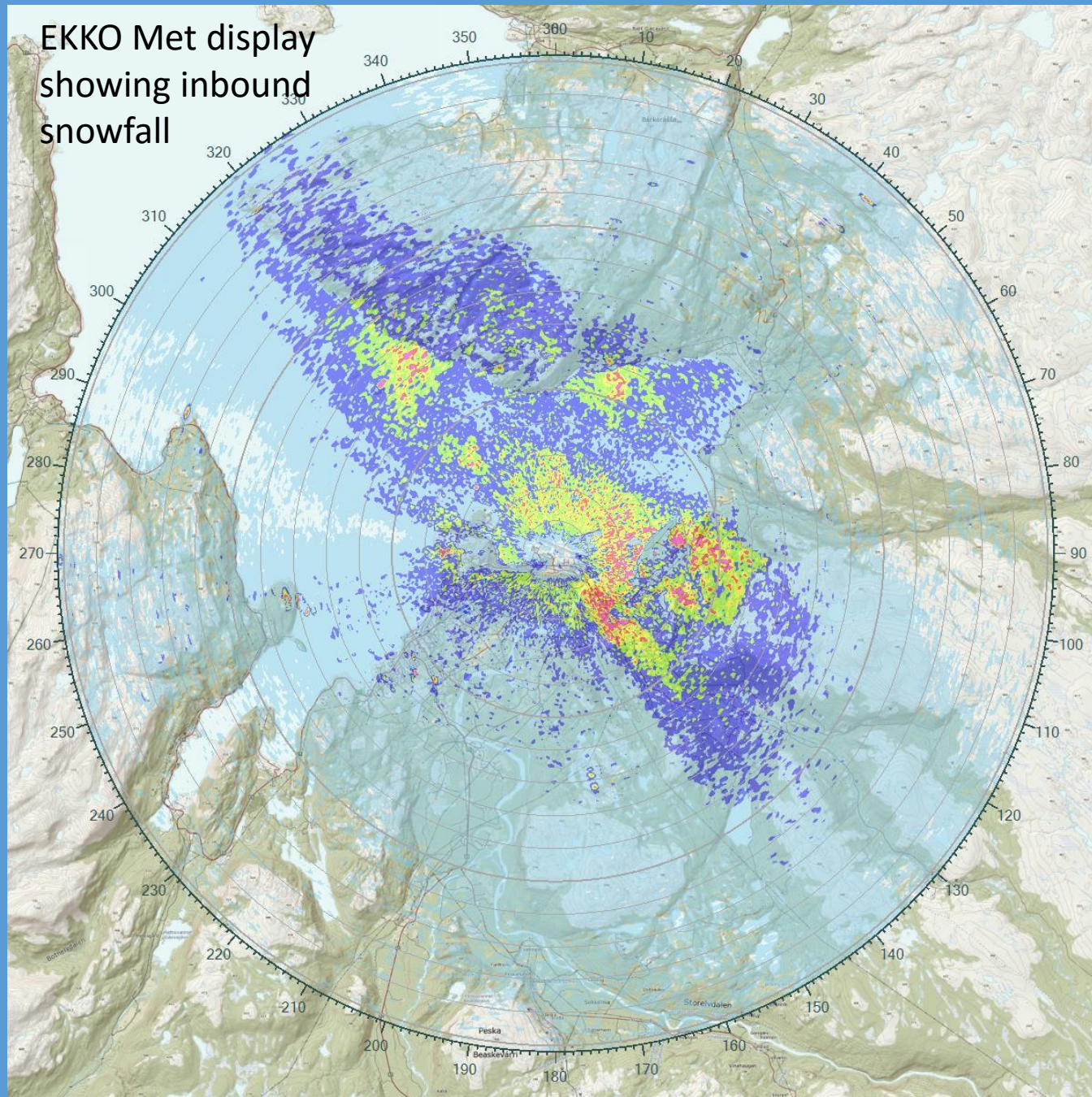


EKKO Met - Alta



Intensively used during RWY sweeping.
Improves RWY availability during winter.
Using the same HW as EKKO BirD.

EKKO Met display
showing inbound
snowfall



Alta værradar



08.03.2014
20:40:32

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