

Development and Remote Monitoring of Navigational Aids

PIANC Seminar Helsinki 2009

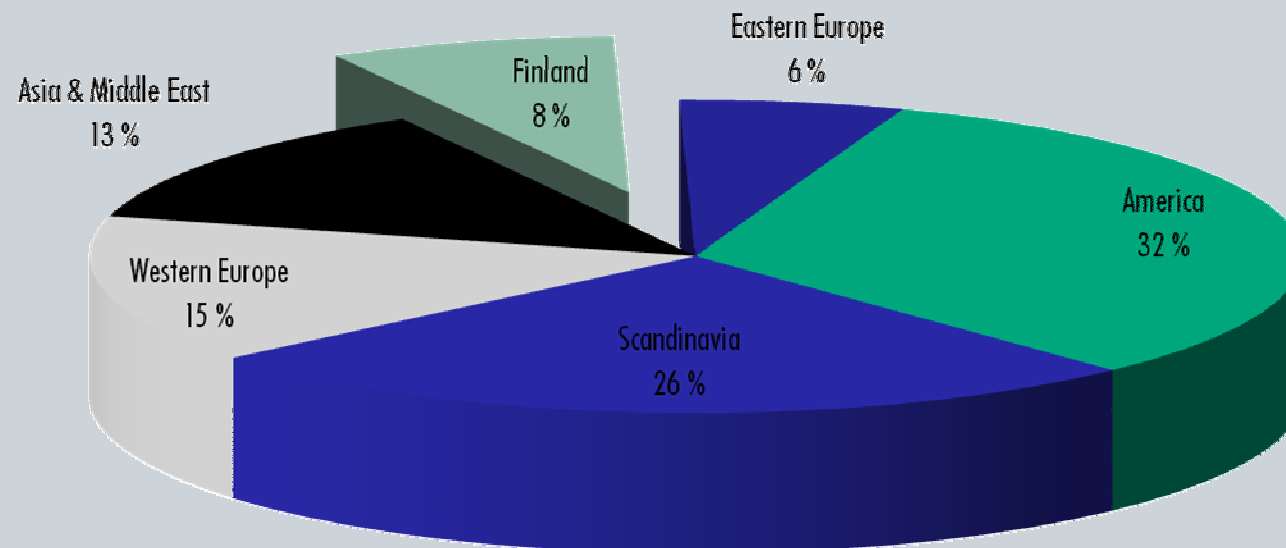
Jonas Lindberg

Content

- Short company presentation and history
- Product Development in Visual aids
- Fully integrated AtoN Remote monitoring

- Private limited
- Turnover 8,0 MEUR (2008)
- Employees 24 in Finland and 12 in Germany
- Business areas:
 - Aids to Navigation
 - Telematics for Roads
 - Signal systems for Railways

Marine Sales Distribution 2008



Fixed AtoN's

- 155/300 mm optics
- Old glass lenses
- Pilar lights
- Beacons 5-12M
- White 10M range already at only 10W!



LED Lantern Products

SABIK

- LED Buoy Lanterns
- Range Lights
- Traffic Signals
- Light Tubes
- Integrated Power Supplies
- Sector Light



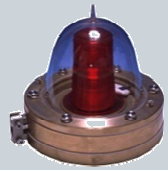
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Floating AtoN

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Energy consumption / day $I_0 = 40 \text{ cd (4NM)}$

SmartFlasher



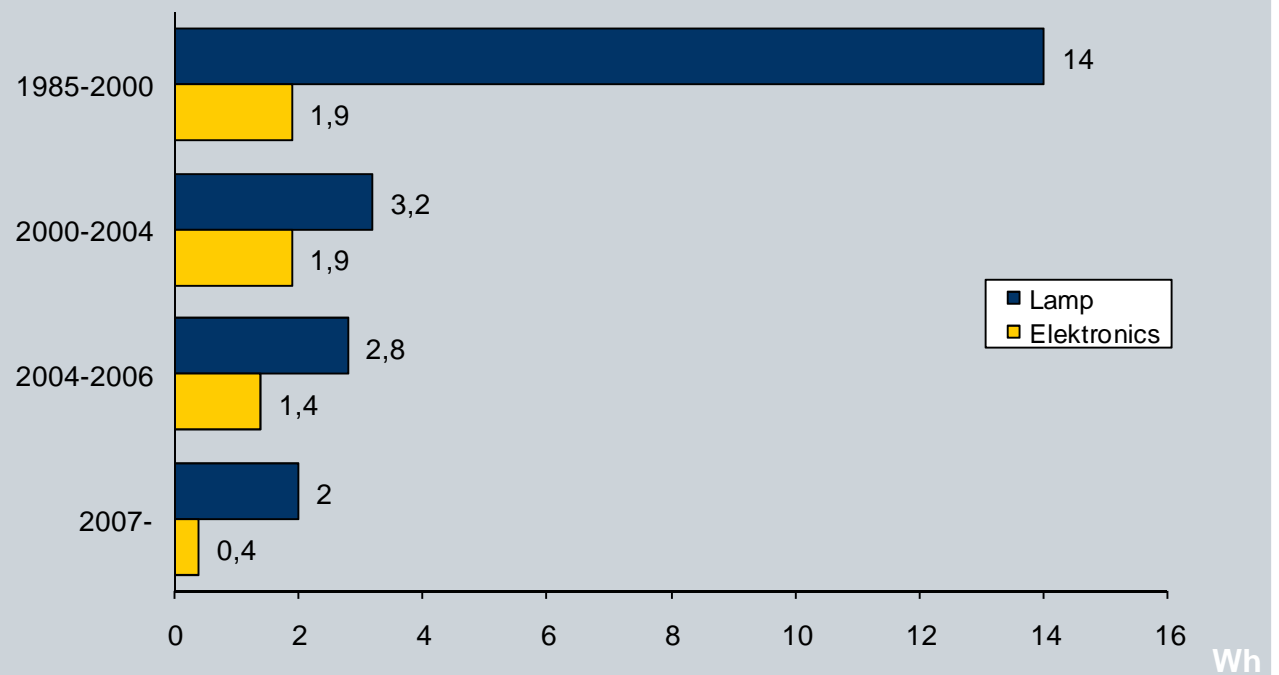
SmartFlasher
+ LED



LEDFlasher



SMC



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Lighted Ice Spar Buoy

SVV 500-6

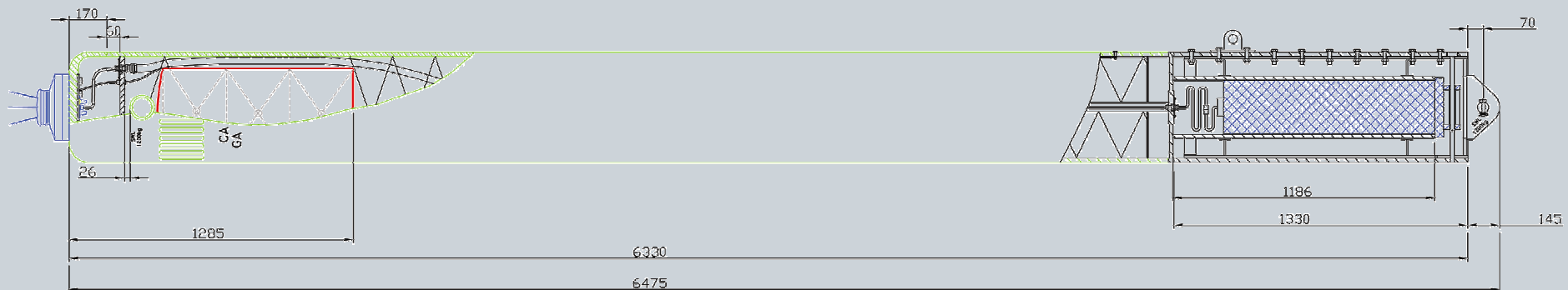
- Diameter Ø 500mm
- Overall length 6,5m
- Weight 450 kg
- Focal height 2,3m
- Min. draught 4m
- Options:
 - remote monitoring
 - position monitoring
 - synchronizing



Ice Spar Buoy

SABIK

Main features

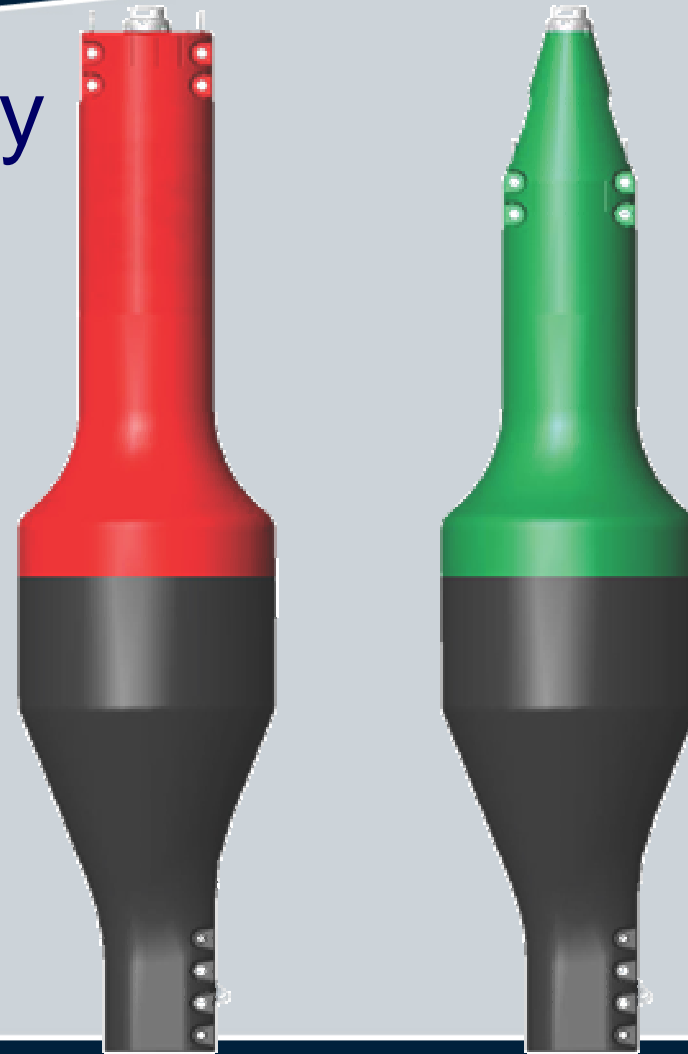


- Adjustable side mooring eye (compensate for heel)
- Large battery that adds to ballast
- Large radar reflector
- Submerged battery
- Lifting hole for synthetic sling
- Close cell polystyrene filled buoy hull

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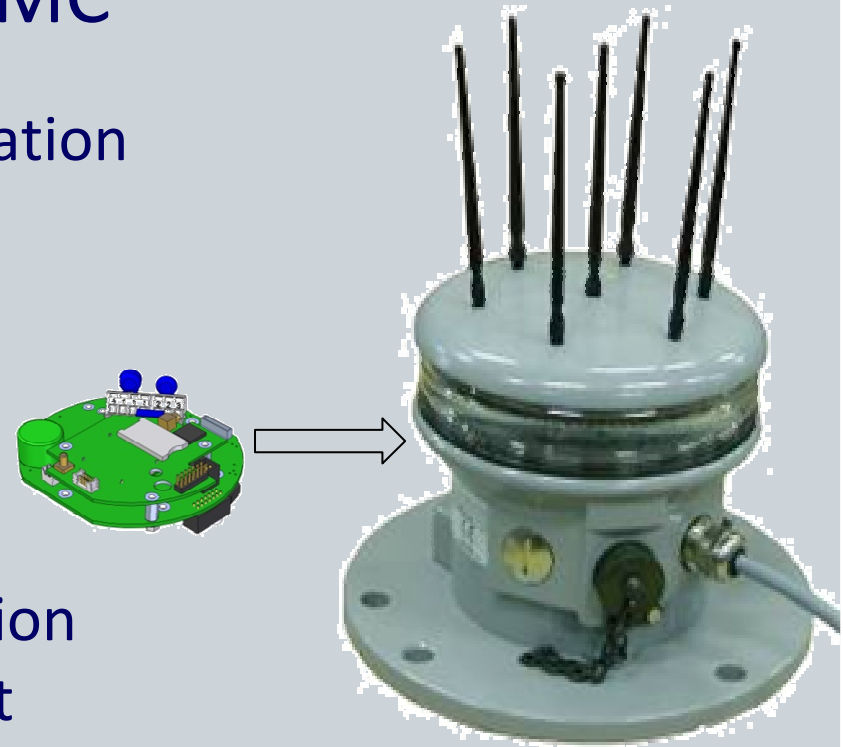
SP 1200 Plastic buoy

- Rijkswaterstaat specifications
- 2,8m focal height
- Weight 1275 kg
- Total length 4,7m
- Diameter 1200/630mm
- Draft 1,9m
- VP-LED lantern
- 5 year battery @ 3 nm range



Sabik Marine Controller, SMC

- Wireless two way IR communication
- LUX daylight sensor
- “Emergency - battery” option
- Intensity range 5%-100%
- 16A PWM solar panel charger
- Black box with 3 years events
- Integrated visual range calculation
- Integrated power measurement
- GSM/GPS Remote monitoring (<math><1\text{mA}</math>)



PDA Programmer

- Wireless communication
- IP 66
- All customer specific setting behind one button!
- Displays actual visual range and power consumption!
- Automatic data collection



PDA Programming device

SABIK

Sabik PDA Programmer, limited access



SABIK SMC 11:03

Read Write

Flash Character
ISO 2

Parameter Template
Default-LeadAcid

Intensity Setting, % 40

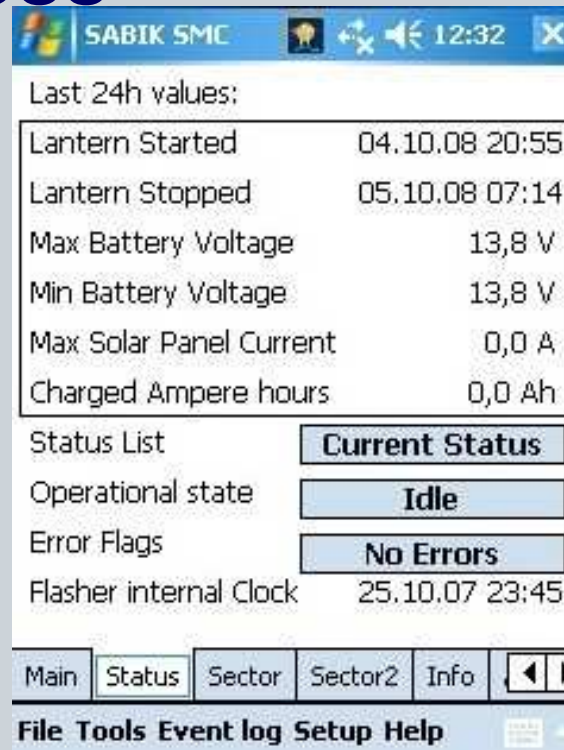
Photocell Treshold Level, lx 50

Visual Range 4,8 NM

Operational Status Idle No Errors

Main Status About

File Tools Event log Setup Help



SABIK SMC 12:32

Last 24h values:

Lantern Started	04.10.08 20:55
Lantern Stopped	05.10.08 07:14
Max Battery Voltage	13,8 V
Min Battery Voltage	13,8 V
Max Solar Panel Current	0,0 A
Charged Ampere hours	0,0 Ah

Status List **Current Status**

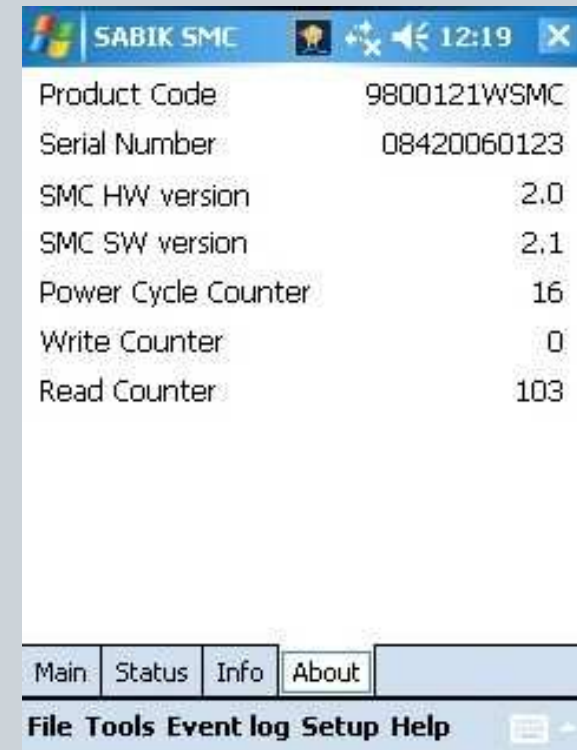
Operational state **Idle**

Error Flags **No Errors**

Flasher internal Clock 25.10.07 23:45

Main Status Sector Sector2 Info

File Tools Event log Setup Help



SABIK SMC 12:19

Product Code 9800121WSMC

Serial Number 08420060123

SMC HW version 2.0

SMC SW version 2.1

Power Cycle Counter 16

Write Counter 0

Read Counter 103

Main Status Info About

File Tools Event log Setup Help

PDA full access

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SABIK SMC 12:29

Flash Character FI_I3s

1. On	0.30		
2. On	0		
3. On	0	Flash Character	FI_I3s
4. On	0	LED Nominal Current, A	0.75
5. On	0	LED Intensity, %	40
6. On	0	Photocell Treshold, lx	50
7. On	0	Photocell Hysteresis, lx	45
8. On	0	Fixed Light	No
9. On	0	Sync Delay, s	0
10. On	0	Forced Mode	Not Forced
		Minimum Battery Voltage	10.0
		Battery Hysteresis, V	1.0
		Flasher internal Clock	25.10.07 23:45

Main Status Flasher Charger Timer

File Tools Event log Setup Help

SABIK SMC 12:36

SABIK SMC 12:42

SABIK SMC 12:40

SABIK SMC 12:35

Station II

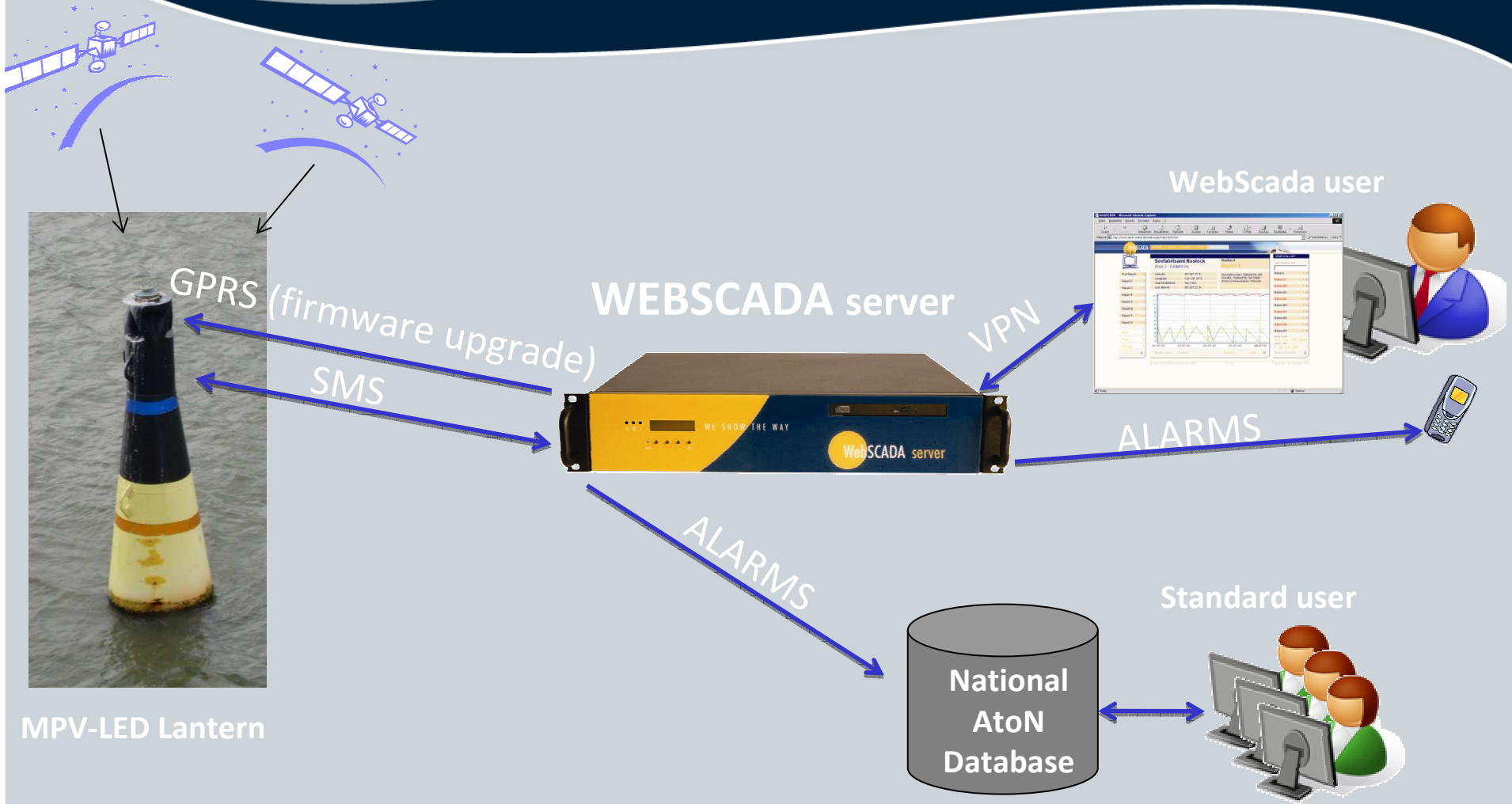
Cut in voltage	13.7	▲▼
Cut out voltage	14.1	▲▼
Battery temp. comp., mV/C	0.03	▲▼
Boost Charge Hysteresis, V	0.40	▲▼
Minimum Battery Voltage	10.0	▲▼
Battery Hysteresis, V	1.0	▲▼
PWM Charging Enabled	Yes	▼

Main Status Flasher Charger Timer

File Tools Event log Setup Help

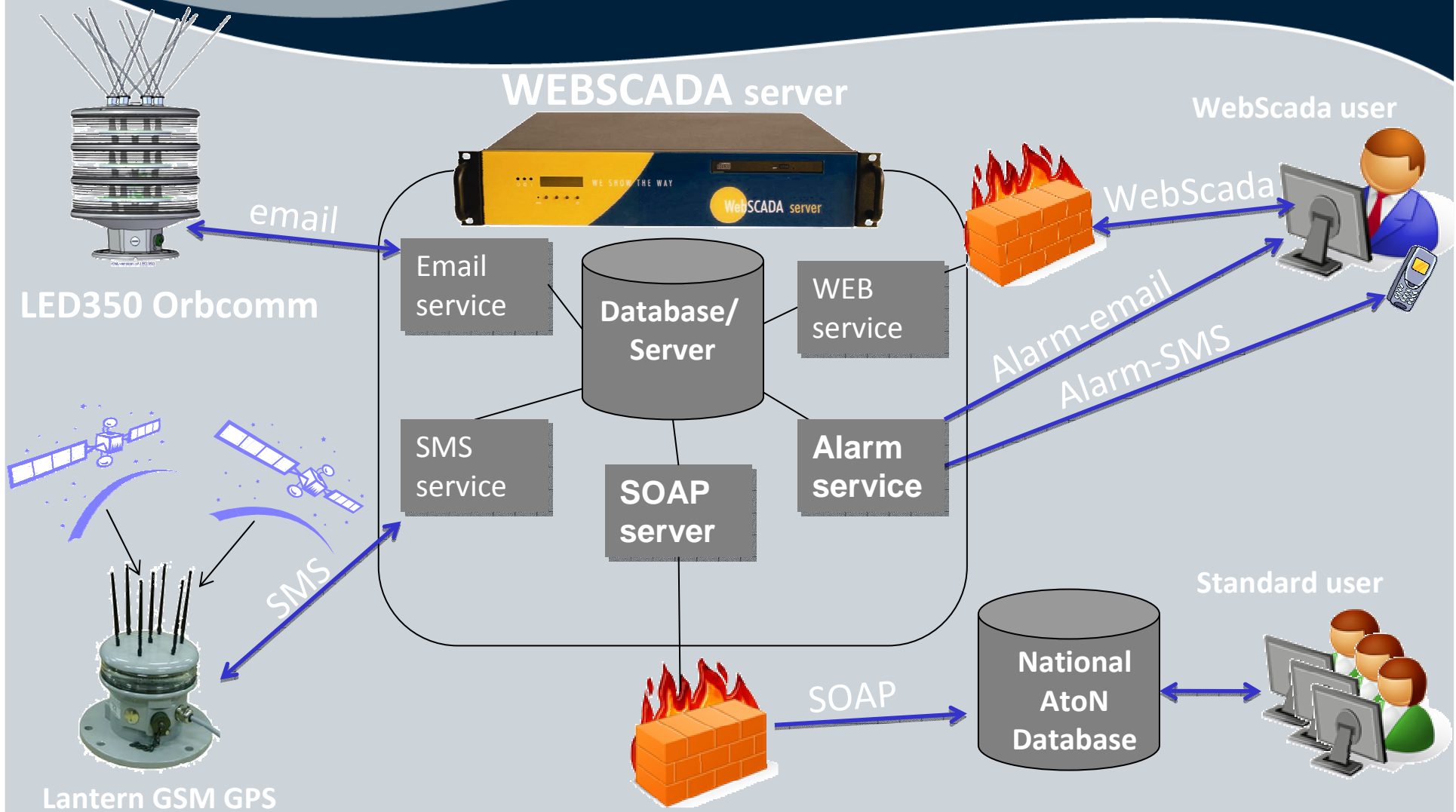
Remote monitoring

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Remote monitoring



Main objectives

- Longer service intervals, reduced cost
- Proven availability of AtoNs
- Quality measurement tool for outsourced maintenance
- “Notices to mariners” in real time
- Possibility to predict maintenance requirements

THANK
YOU