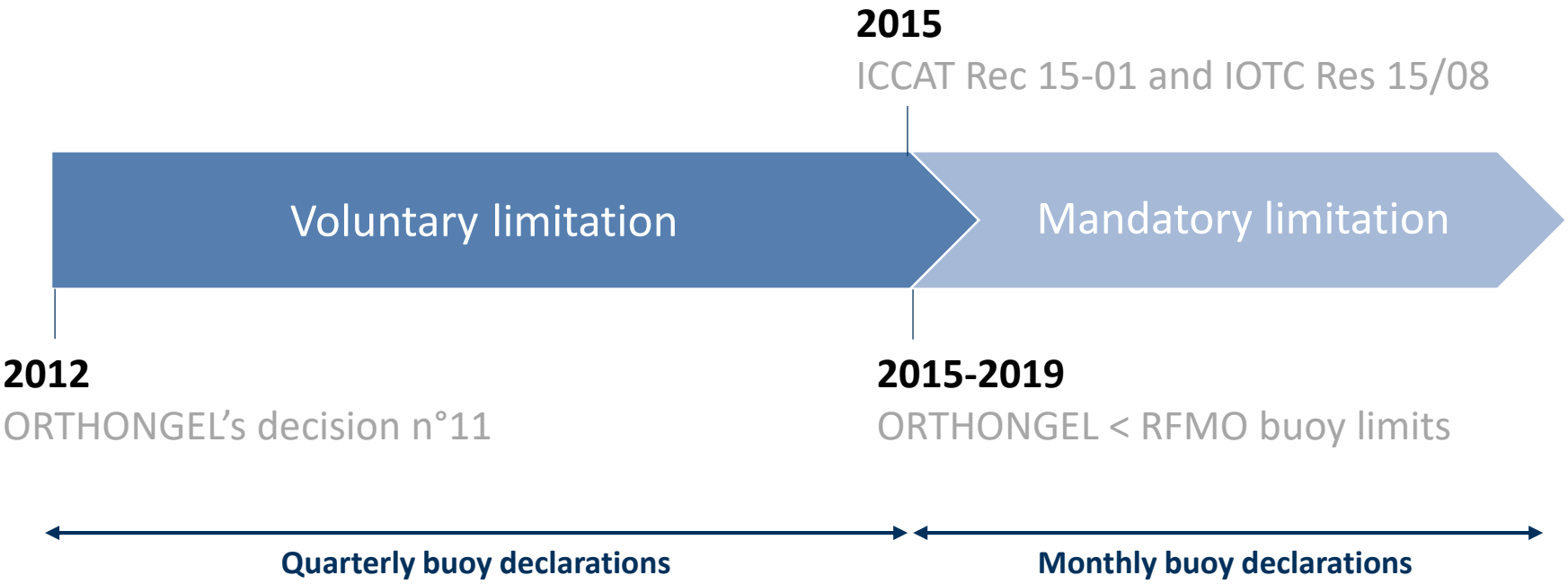
Options for a better monitoring and control of operational buoys

A. Maufroy, D.M. Kaplan and M. Goujon
J-T-RFMO FAD WG2019_Maufroy_S06
orthongel@orthongel.fr

Voluntary and t-RFMO buoy limits

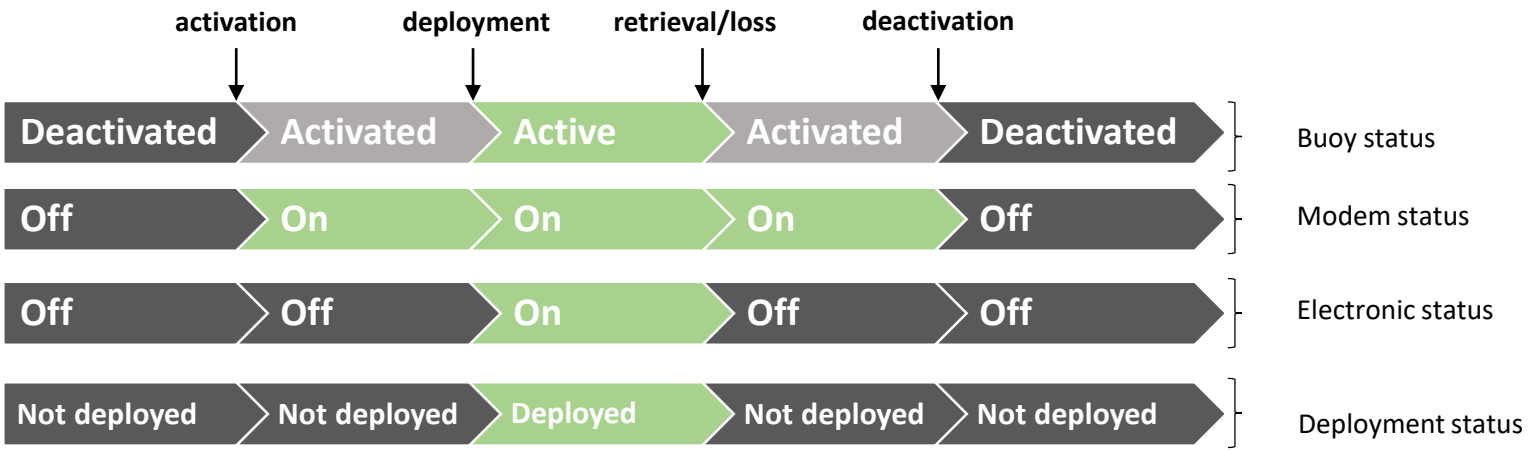


Monthly Buoy Declarations (MBDs)

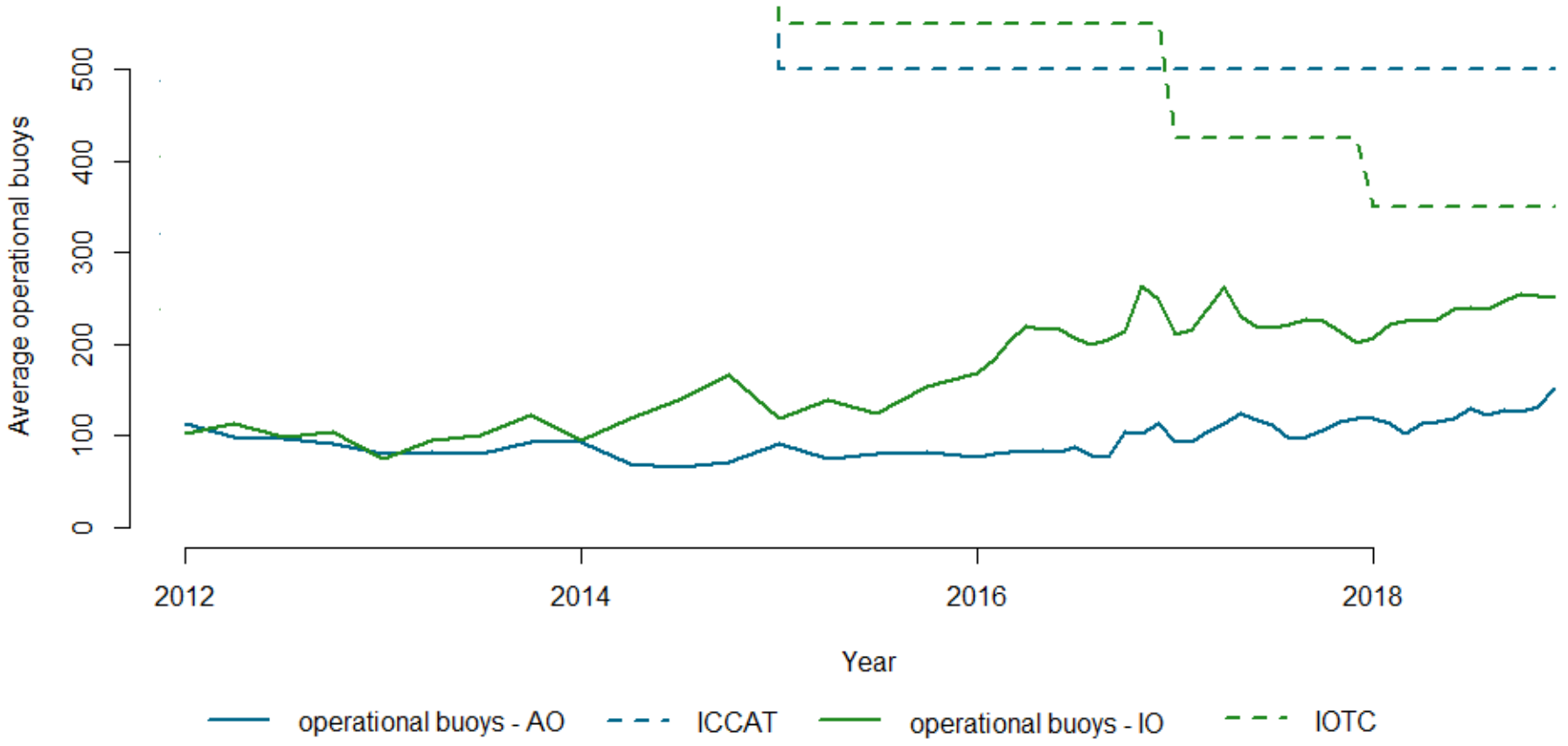
MONTHLY BUOY DECLARATION

COMPANY	XX
VESSEL	XX
PERIOD	January 2019

Date	Active	Activations	Deactivations
01/01/2019	173,8	0,1	0
02/01/2019	173,8	0,5	0

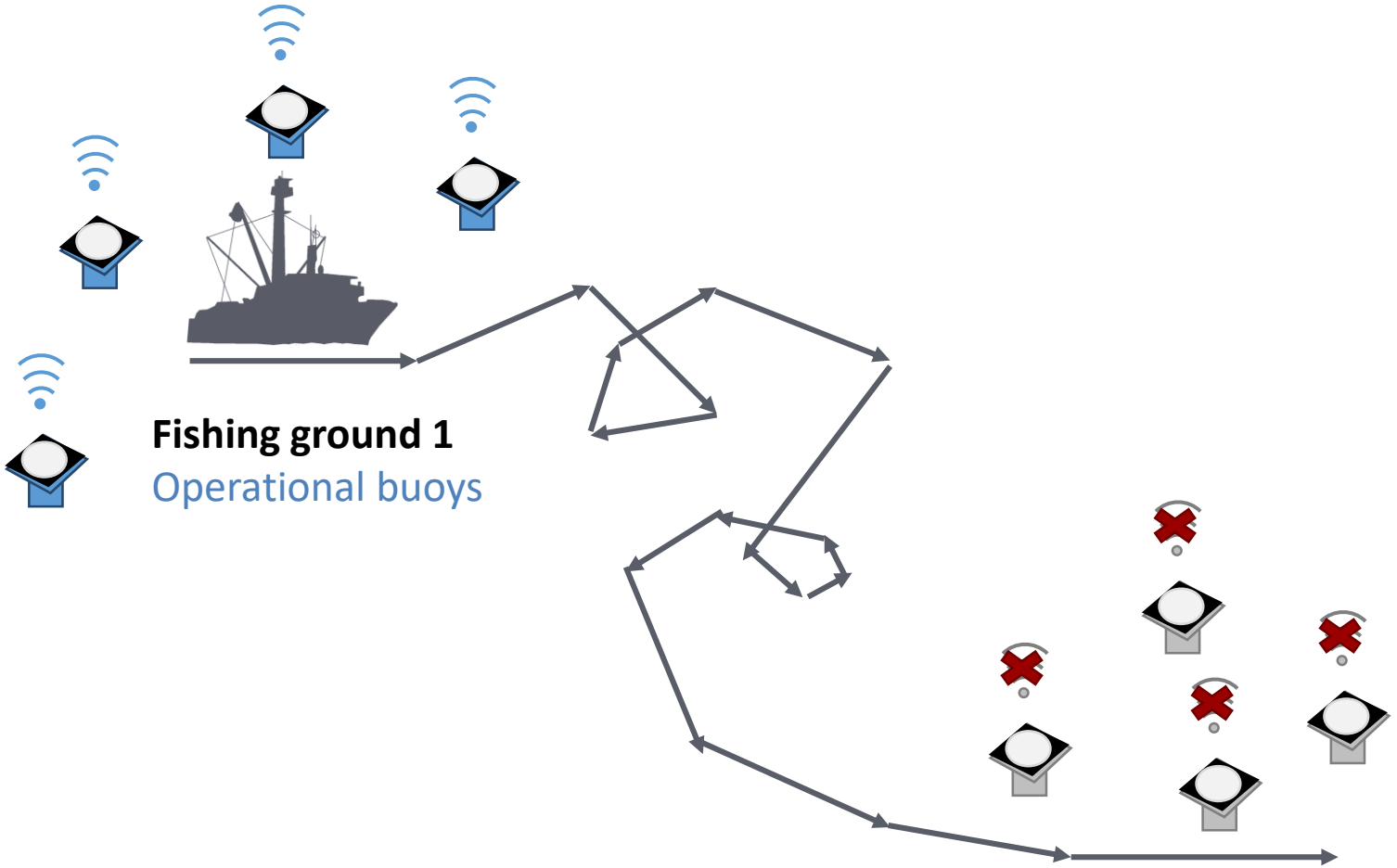


Active buoys per vessel (2012-2018)

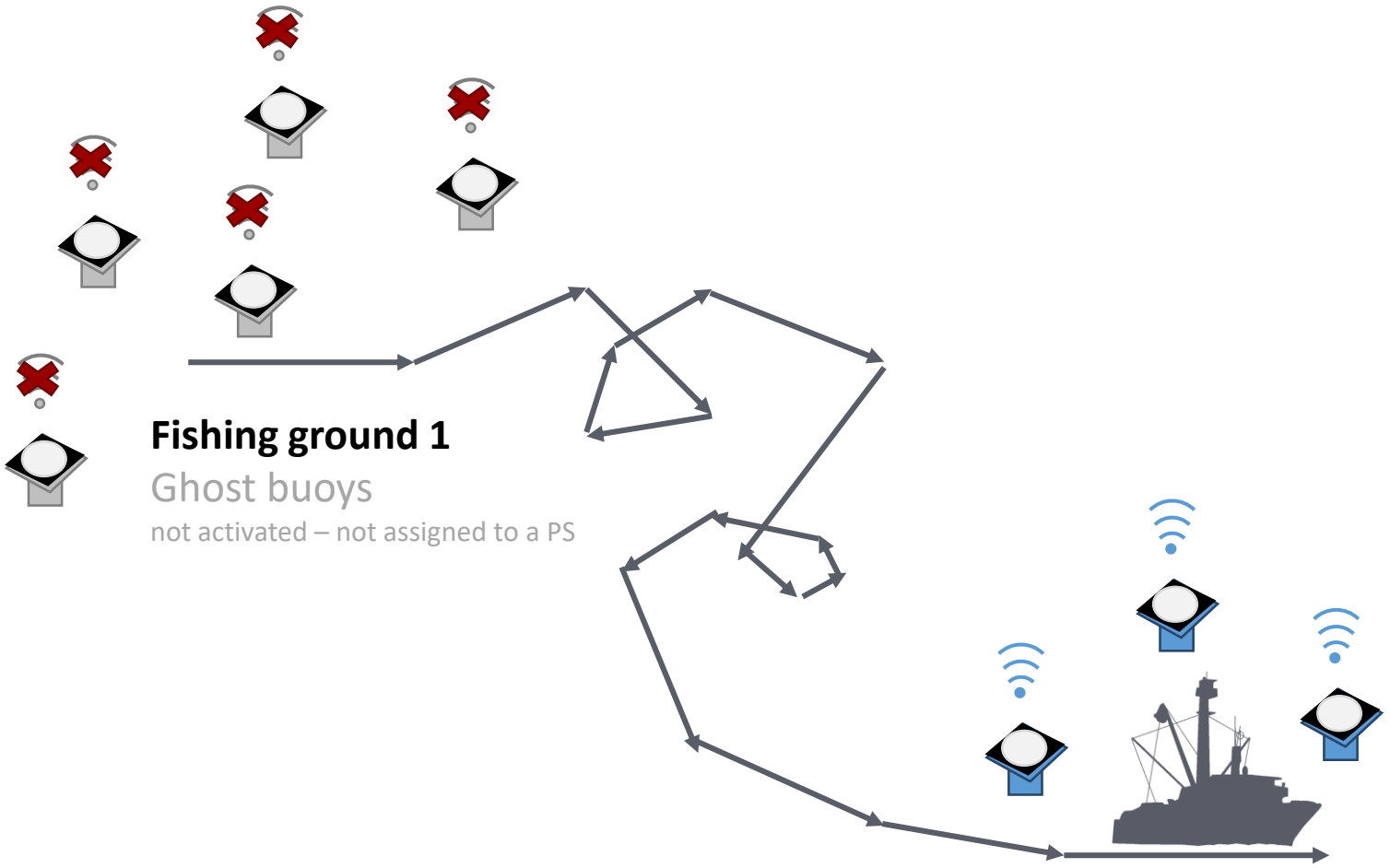


→ buoys per vessel < t-RFMO buoy limits since 2015

Improving the control of buoy use: « ghost buoys »



Improving the control of buoy use: « ghost buoys »



Fishing ground 1

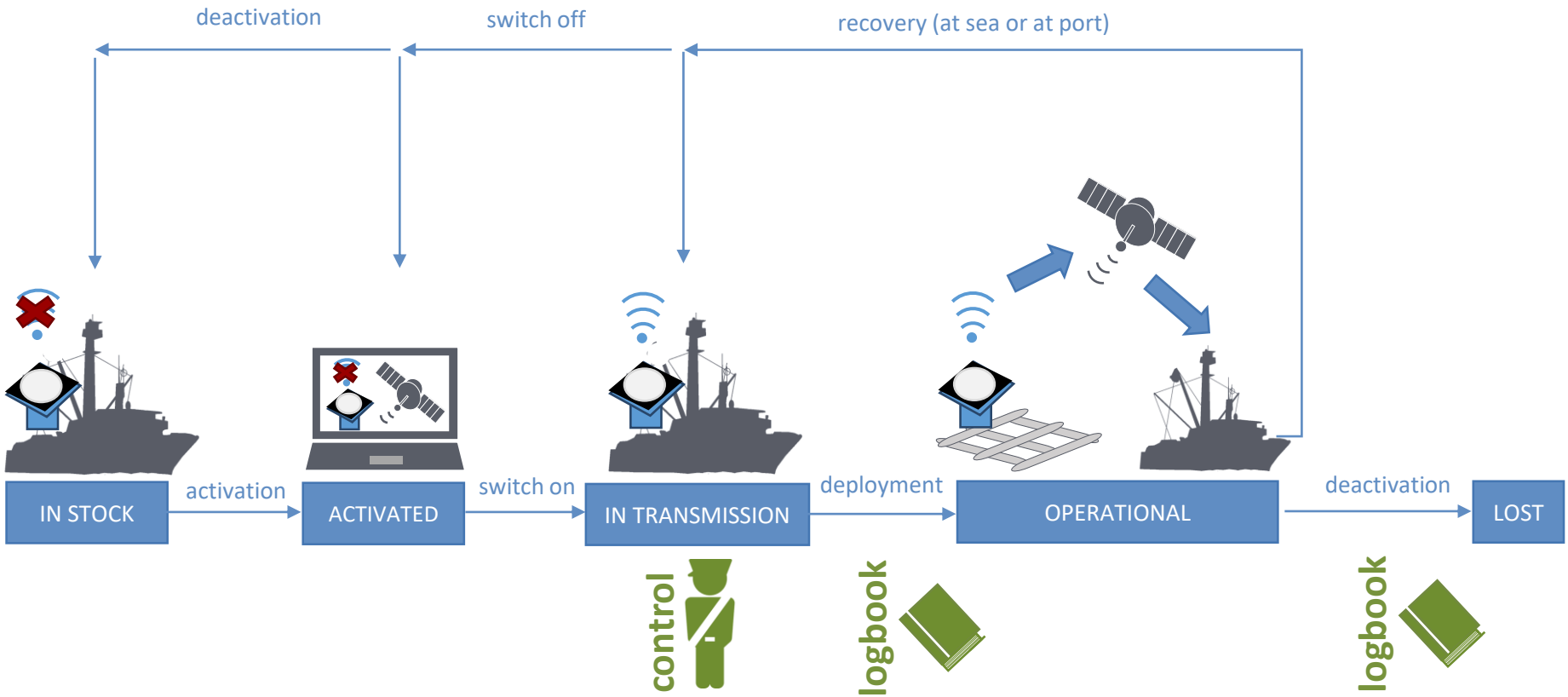
Ghost buoys

not activated – not assigned to a PS

Fishing ground 2

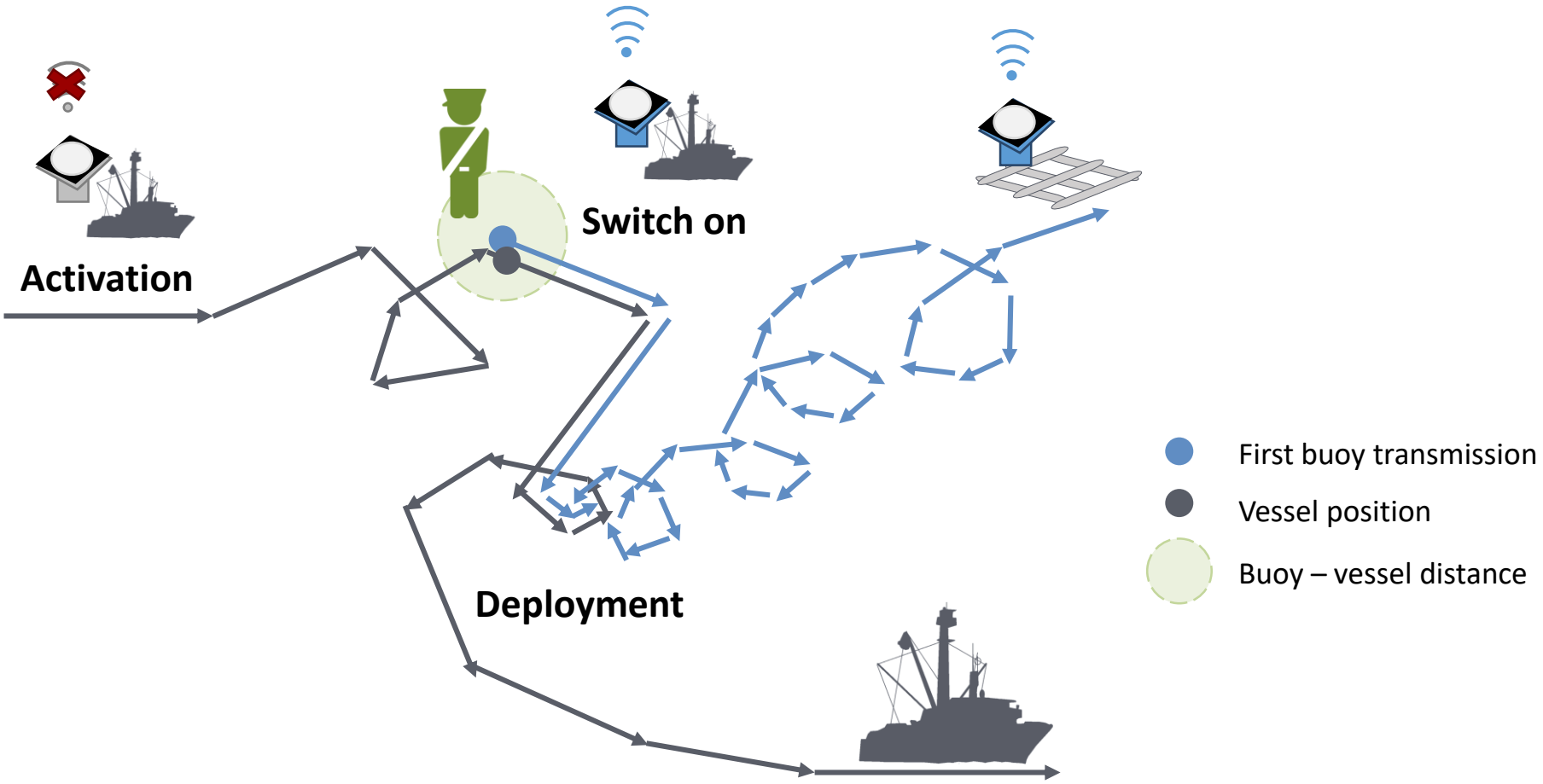
Operational buoys

Improving the control of buoy use: definitions

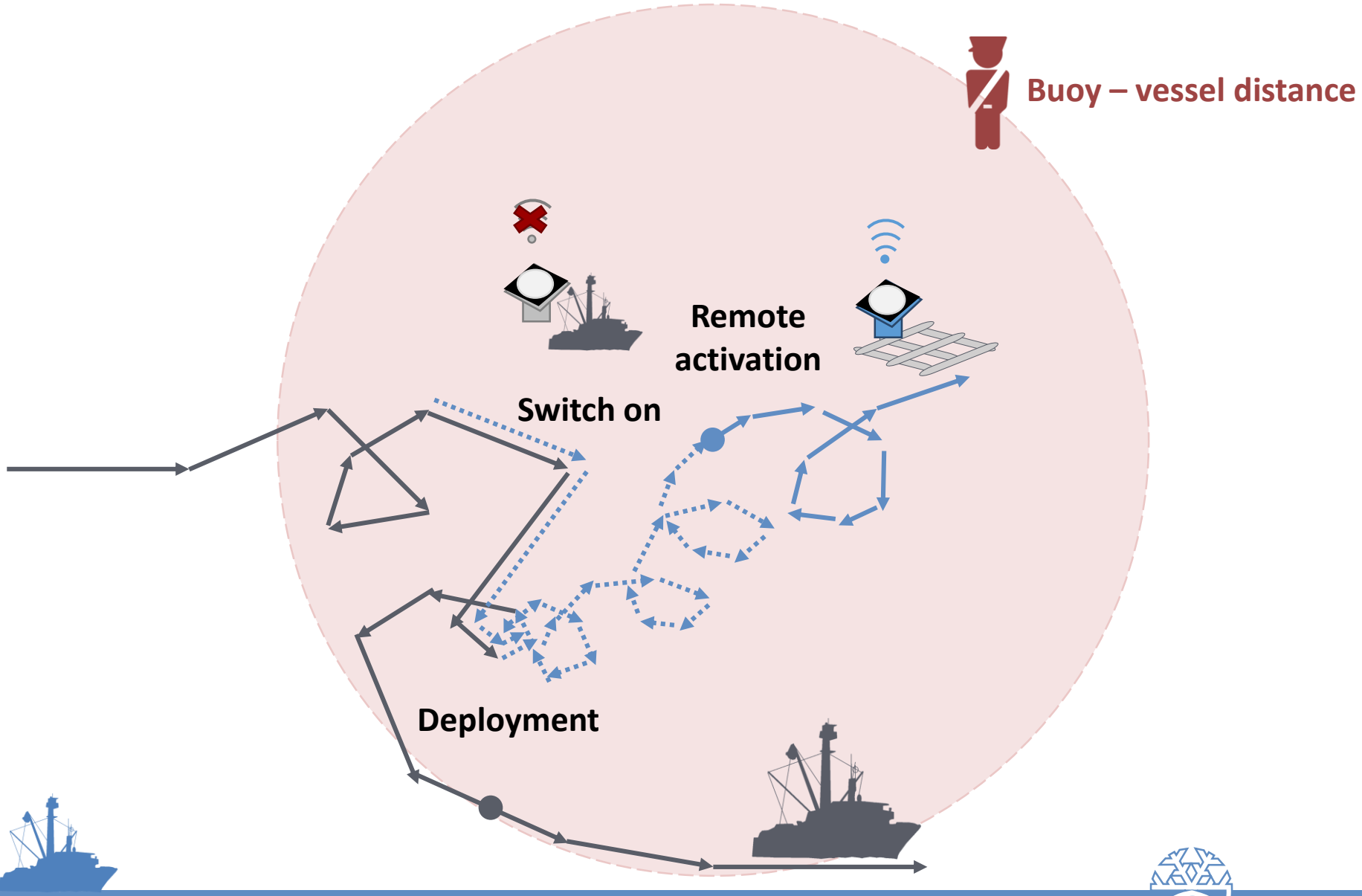


- IOTC Res 18/08: on board activation → control ?
- Confusion between activation and first transmission → ~~active~~ operational

Improving the control of buoy use: verification



Improving the control of buoy use: verification



Improving the control of buoy use: minimum standards

Information	Objective / Description	Format
Buoy identifier	Similar to logbook declarations	
Buoy serial number	Buoy manufacturer id	
Owner vessel	Vessel having activated the buoy	
Assigned vessel	Vessel(s) receiving buoy information	
Support vessel	In case of activation by a support vessel	
Activation Date	Detect the beginning of buoy use	UTC
Position of the vessel at activation*	Latitude and longitude	Decimal degrees
First transmission date		UTC
Position of the buoy at the first transmission	Latitude and longitude	Decimal degrees
Position of the vessel at the first transmission*	Latitude and longitude	Decimal degrees
Deactivation date	Detect the beginning of buoy use	UTC
Last transmission date		UTC
Position of the buoy at the last transmission	Latitude and longitude	Decimal degrees

* Transmitted by buoy providers

Tests over 2010-2017 : VMS x voluntary provided GPS positions of buoys

→ > 98 % of valid use of buoys

→ effect of VMS data availability (non-French flag)

Conclusions - perspectives

❶ **Revision of definitions in t-RFMO management measures**

→ replace “active” by “operational”

❷ **Improved monitoring and control of operational buoys**

- 2019: adoption of the new methodology by ORTHONGEL
- tests to define appropriate buoy – vessel distance
- adoption of harmonized control rules
- **buoy providers:** real time / **independent control:** post hoc

❸ **Evaluation of the effects of operational buoy limits**

- effects of existing buoy limits ?
- effects of a strict control of operational buoys ? (↑ dFAD loss)

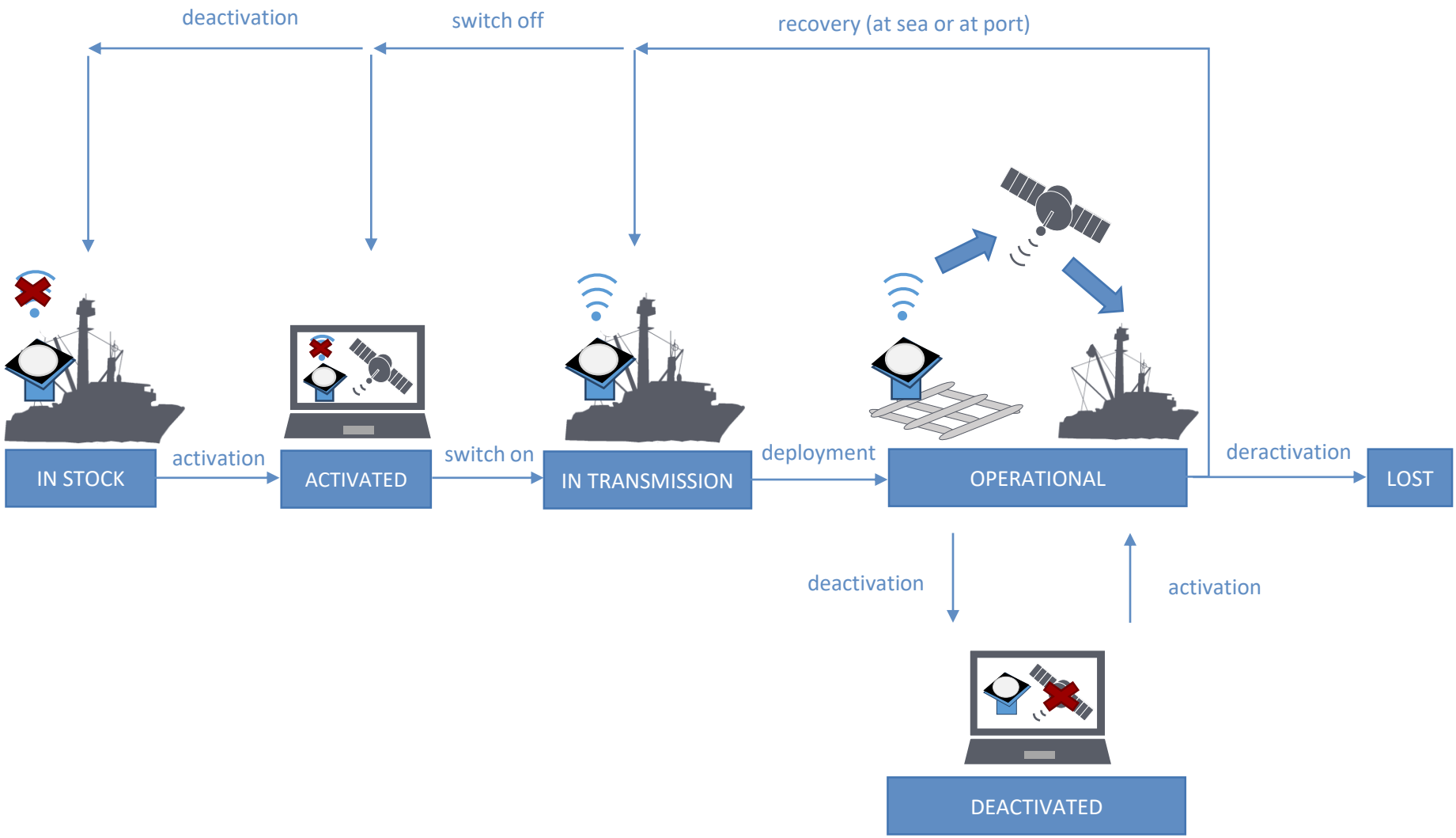
Buoy trajectories x VMS (2010-2017)

Buoy-VMS distance range (km)	No. buoy activations
[0,1)	9,710
[1,2)	6,280
[2,3)	4,549
[3,4)	4,259
[4,5)	4,069
[5,6)	3,839
[6,7)	3,304
[7,8)	2,782
[8,9)	2,229
[9,10)	1,594
[10,11)	895
[11,12)	482
[12,13)	222
[13,14)	106
[14,15)	60
>=15	4,755
No assoc. vessel VMS data	12,526

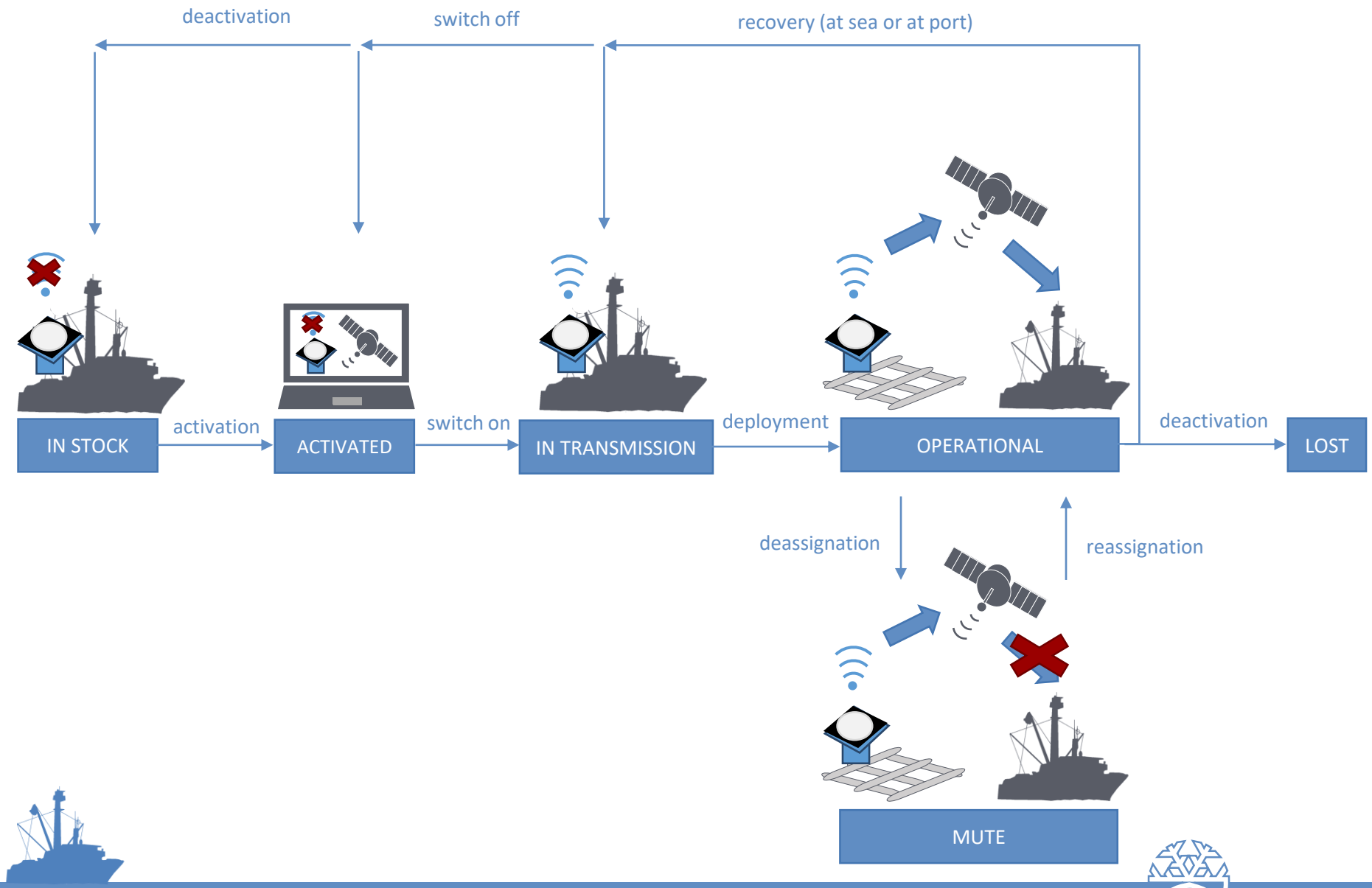
Buoy trajectories x VMS (2010-2017)

VMS data availabilty	< 15 km	>=15 km	No associated PS or support vessel
All VMS data	40,346	1,604	0
Some VMS data	4,126	3,059	0
No VMS data	28	11,309	429
No assoc. vessel	4	732	24

Inappropriate cycle of use: remote deactivation



Inappropriate cycle of use: de-assignation



Inppropriate cycle of use: activation after deployment