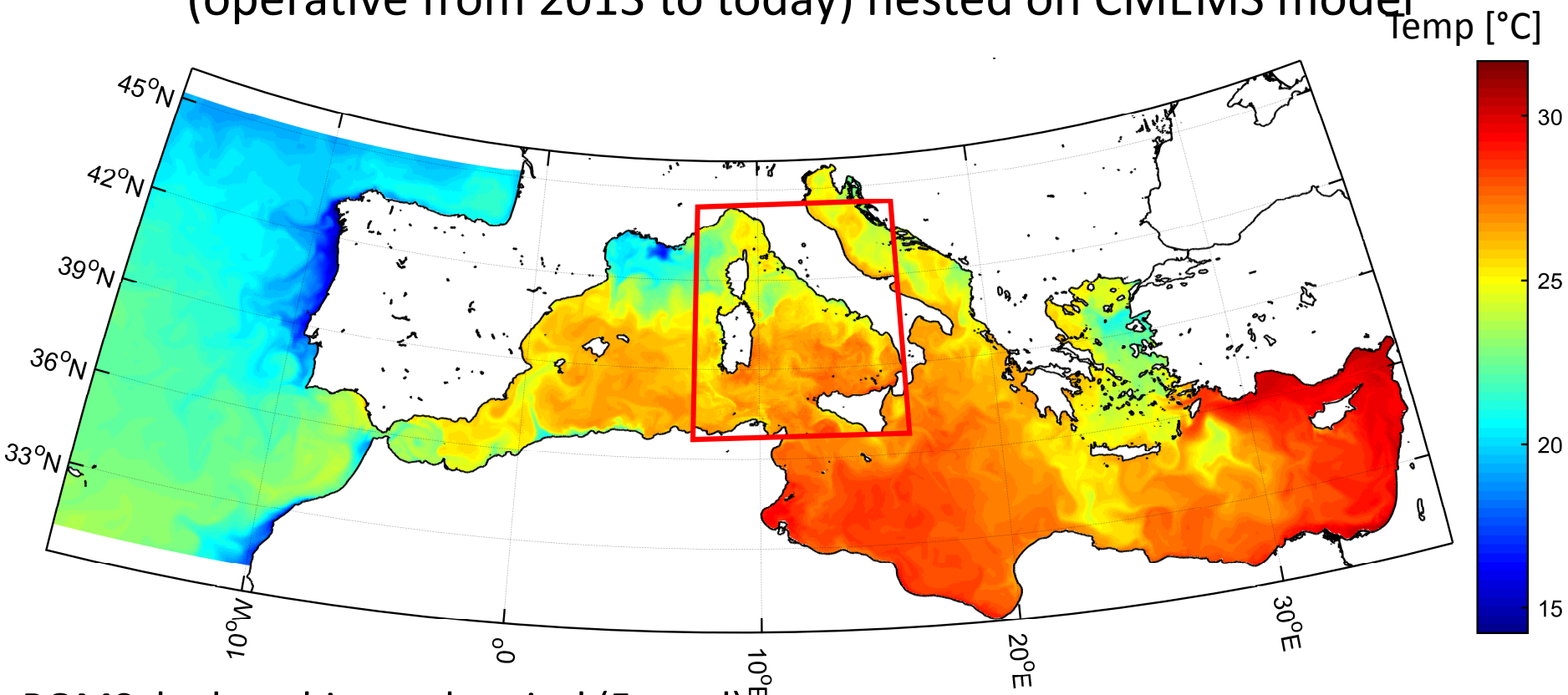
Ocean biogeochemical model

(operative from 2013 to today) nested on CMEMS model



ROMS: hydro + biogeochemical (Fennel)

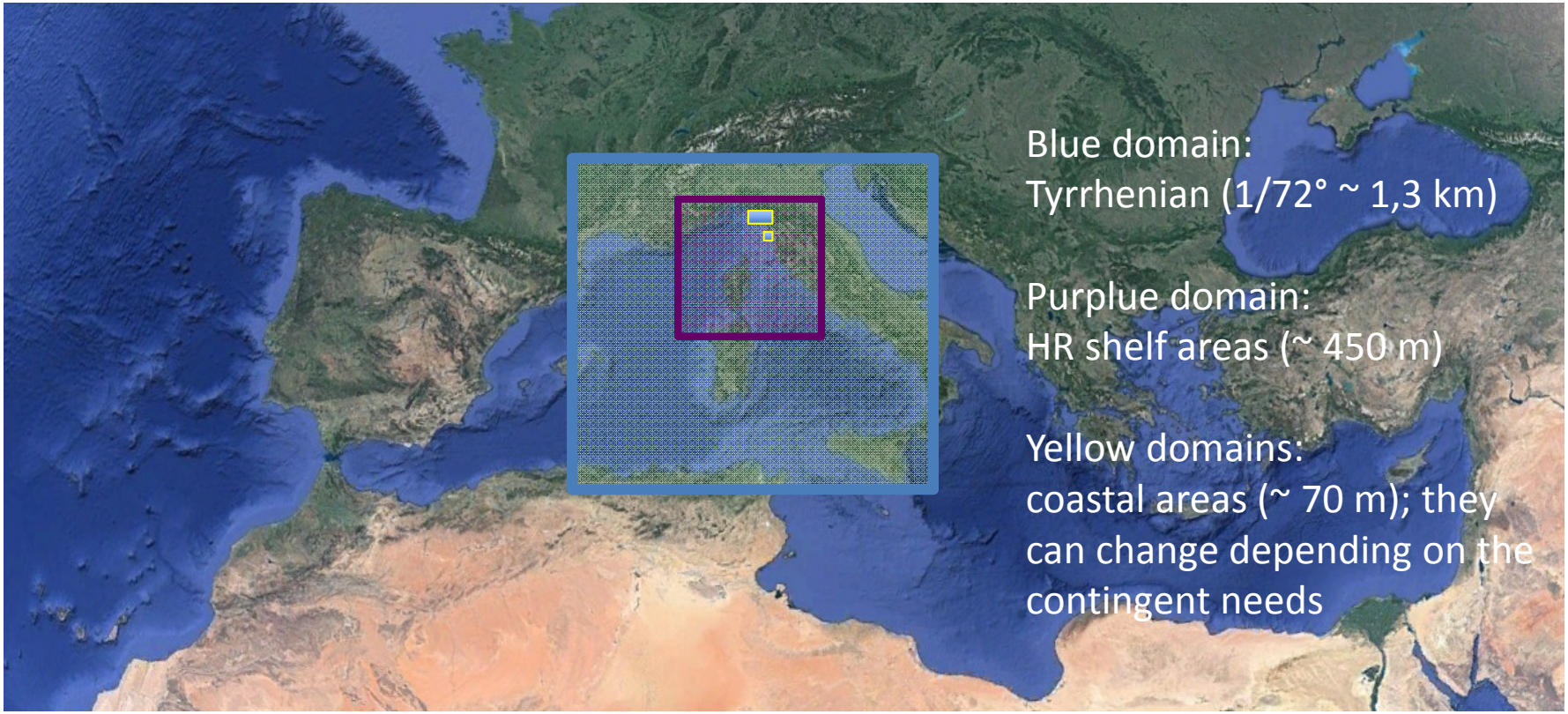
Horizontal resolution (~ 2km)

30 vertical sigma levels

Atmospheric forcing: LaMMA WRF-3km from ECMWF ~ 10km

Boundary conditions: CMEMS ~ 4km

New ocean operative model systems: it has been implementing

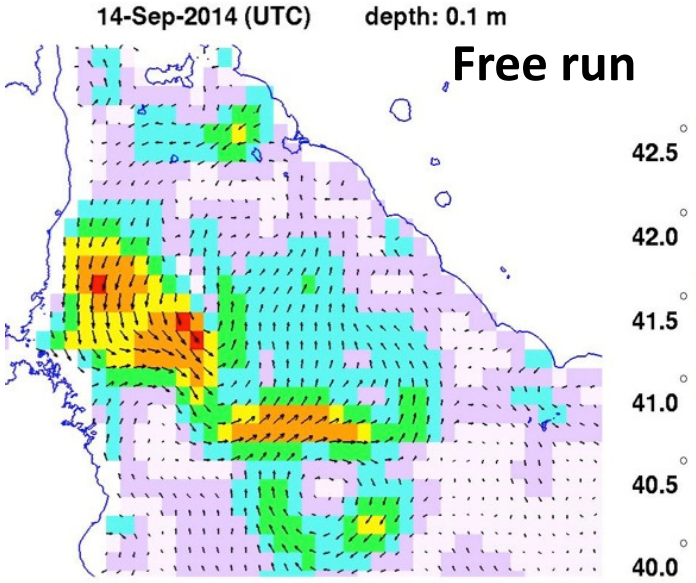


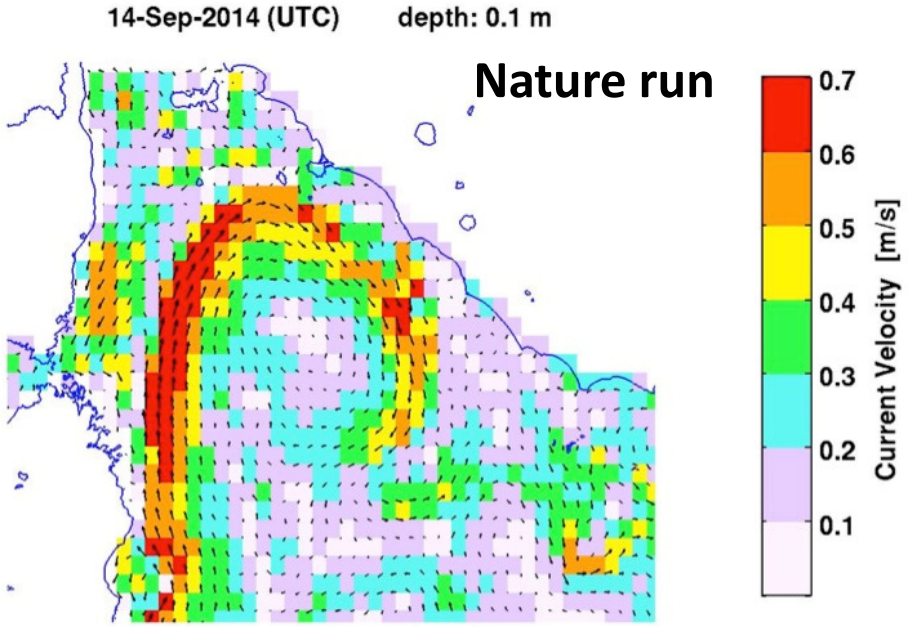
ROMS, native nesting

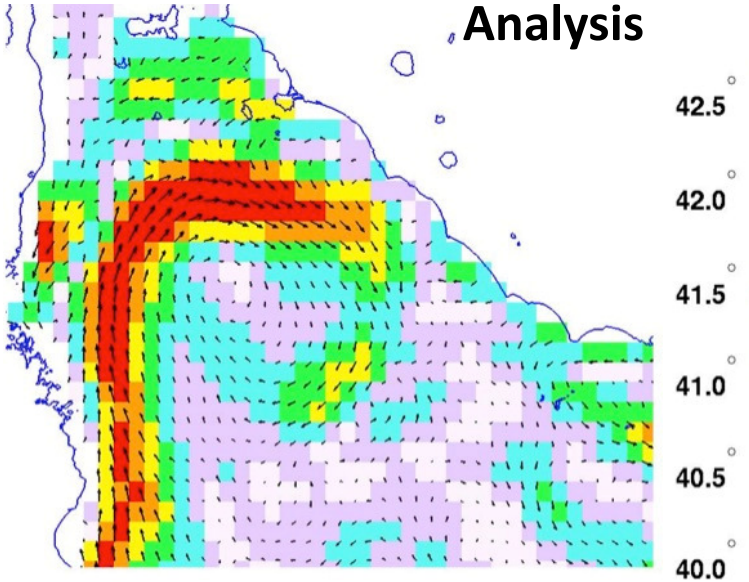
Horizontal resolutions ~ 1.3km, 450m, 70m

Main goals: control the coastal scale; assimilate data at a suitable resolution

ROMS 4DVar tests





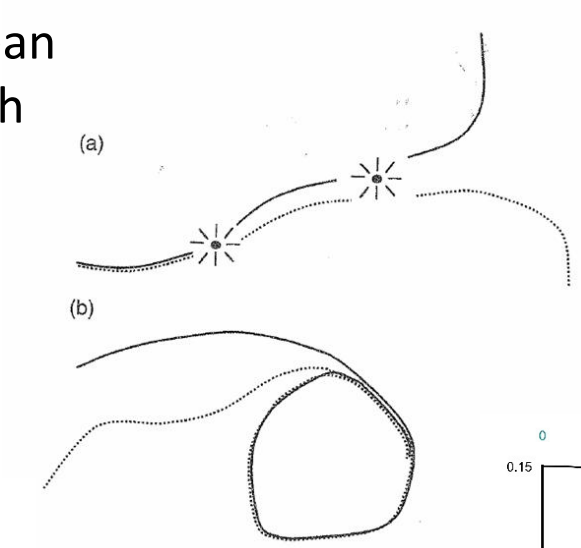


Assimilated data: virtual floats vertical profiles (CTD)

Circulation is correctly modified in the deepern part, not in shelf/coastal area (where no such data were available).

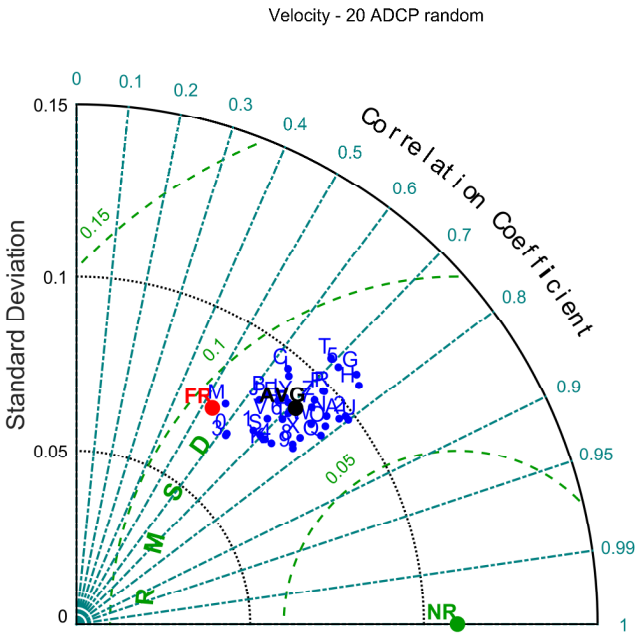
Sampling strategy - study

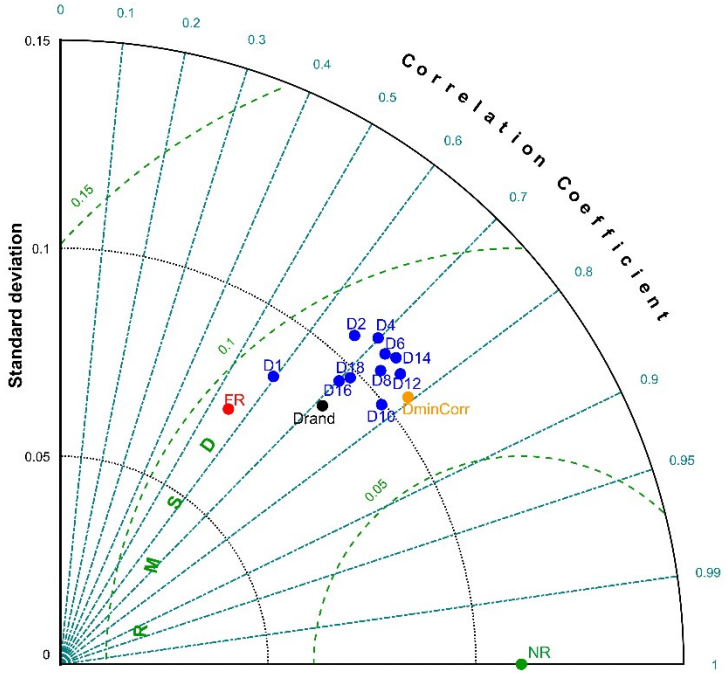
Improving the design of ocean observing networks (Which data? Which positions?)



Strategy: SVD + CORR

Preliminary study on a double gyre model

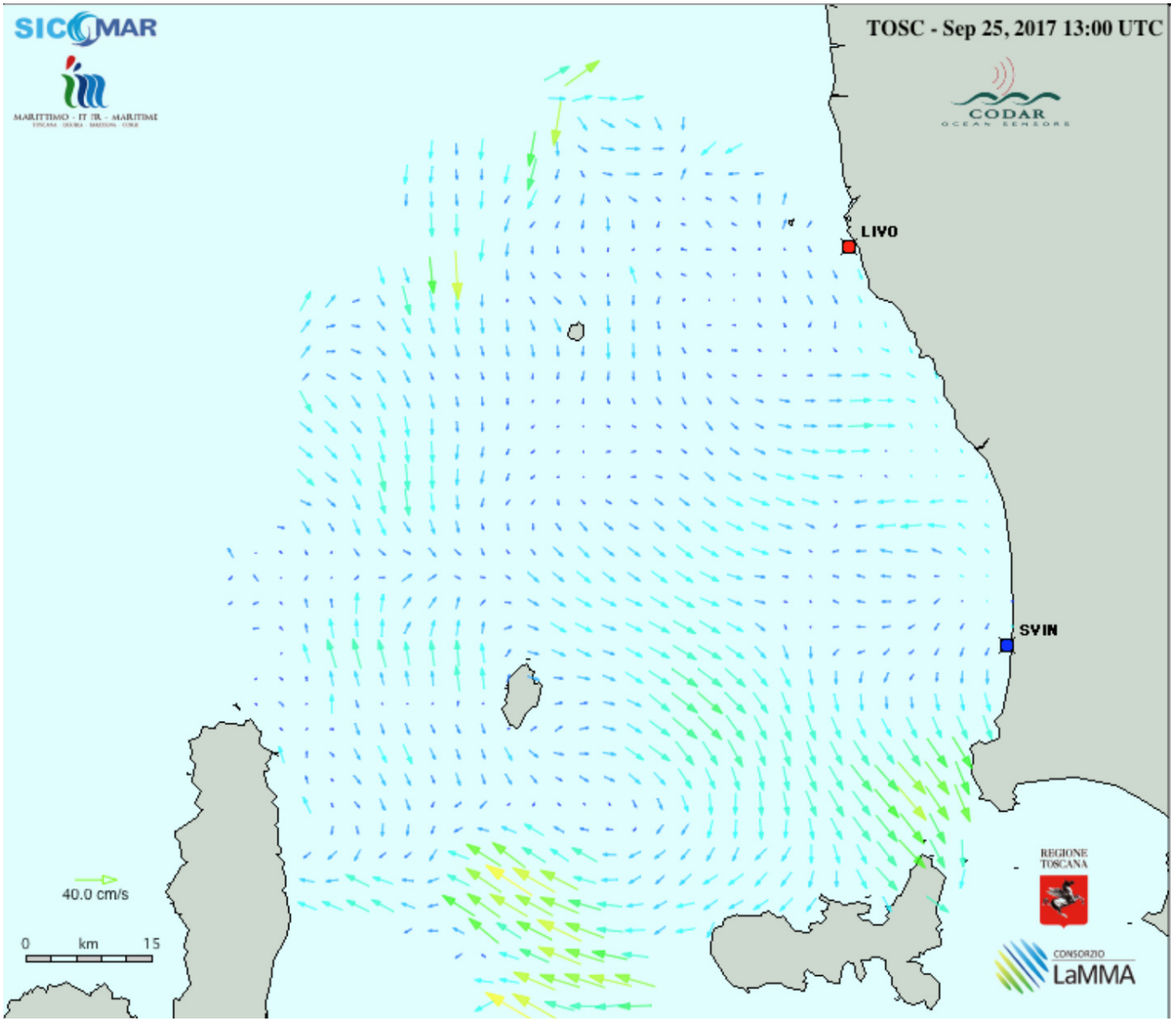


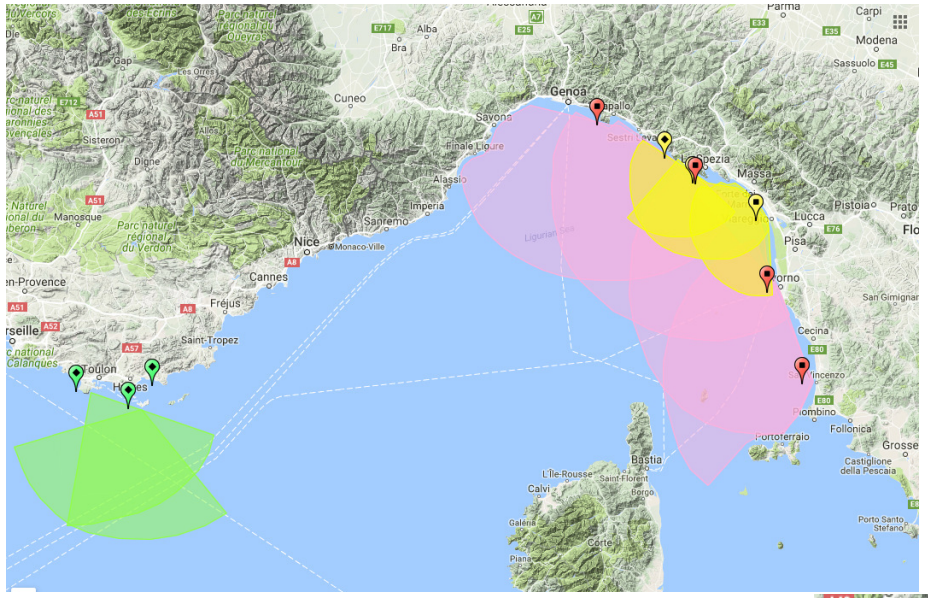


Fattorini and Brandini., 2018

HF coastal radars data

Frequency: 13.5 MHz
Maximum Coverage: 80-90 km
Resolution: 2 km
Operational since June 2015





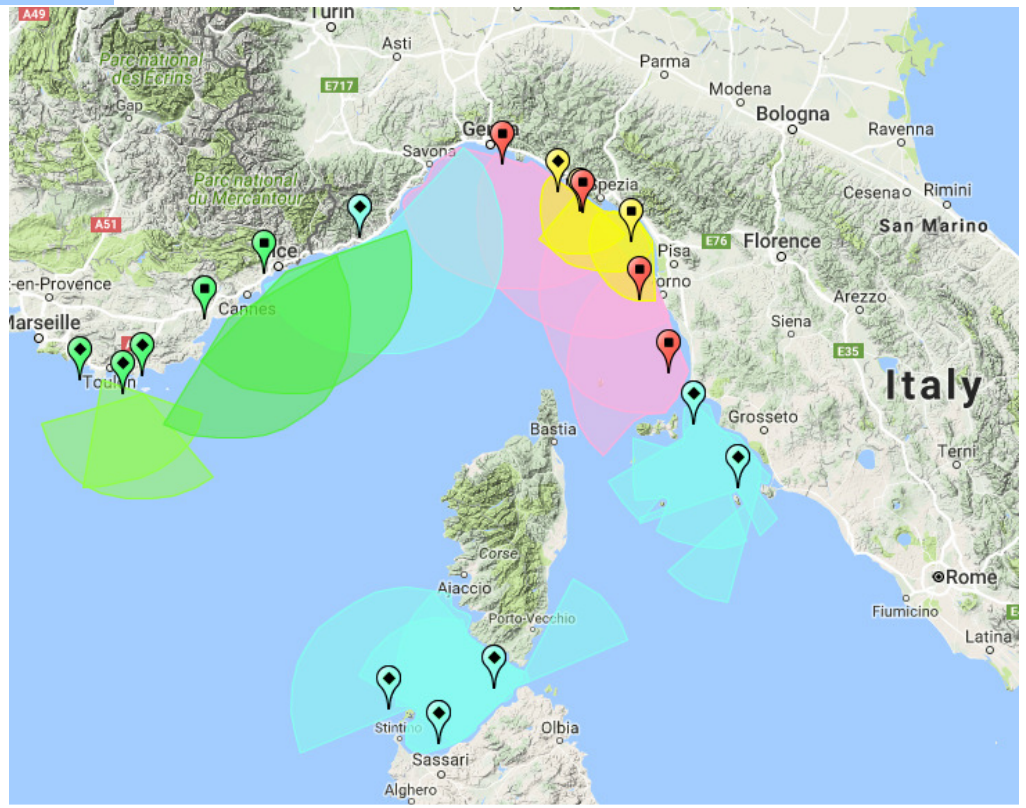
IMPACT

IMpatto Portuale su aree marine protette: Azioni Cooperative Transfrontaliere

Next steps

Radar coverage in IMPACT (by 2018).

Radar coverage in SICOMAR+ (by 2019).



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