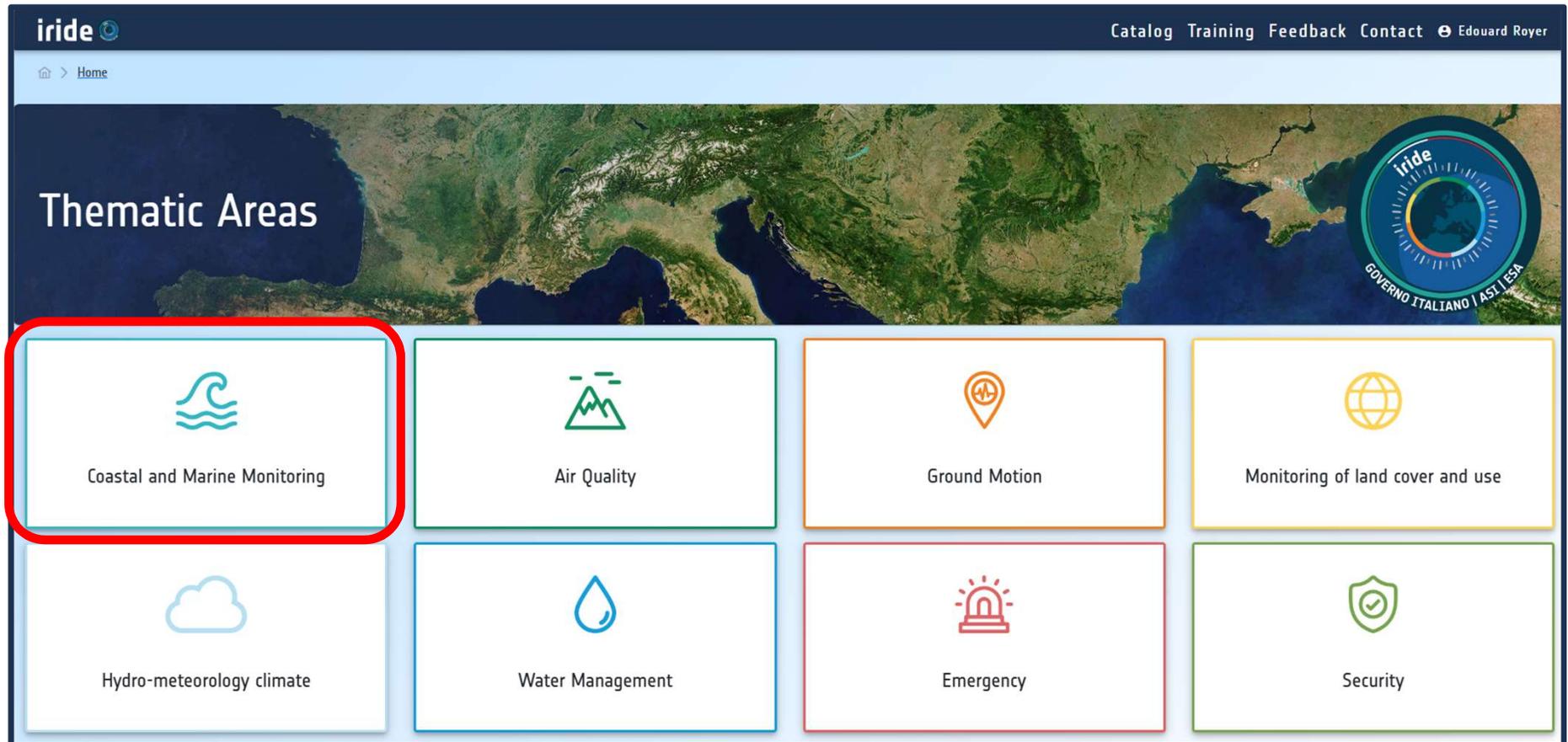


S1 – Coastal and marine monitoring



The screenshot shows the 'iride' website interface. At the top, there is a navigation bar with 'Catalog Training Feedback Contact' and a user profile 'Edouard Royer'. Below the navigation bar is a header with a home icon and the text 'Home'. The main content area features a satellite map of the Mediterranean region with the text 'Thematic Areas' overlaid. A circular logo for 'iride' is in the top right corner of the map area, with the text 'GOVERNO ITALIANO | ASI | ESA' around it. Below the map is a grid of eight thematic area buttons, each with an icon and a label. The 'Coastal and Marine Monitoring' button is highlighted with a red border.

 Coastal and Marine Monitoring	 Air Quality	 Ground Motion	 Monitoring of land cover and use
 Hydro-meteorology climate	 Water Management	 Emergency	 Security

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union – Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

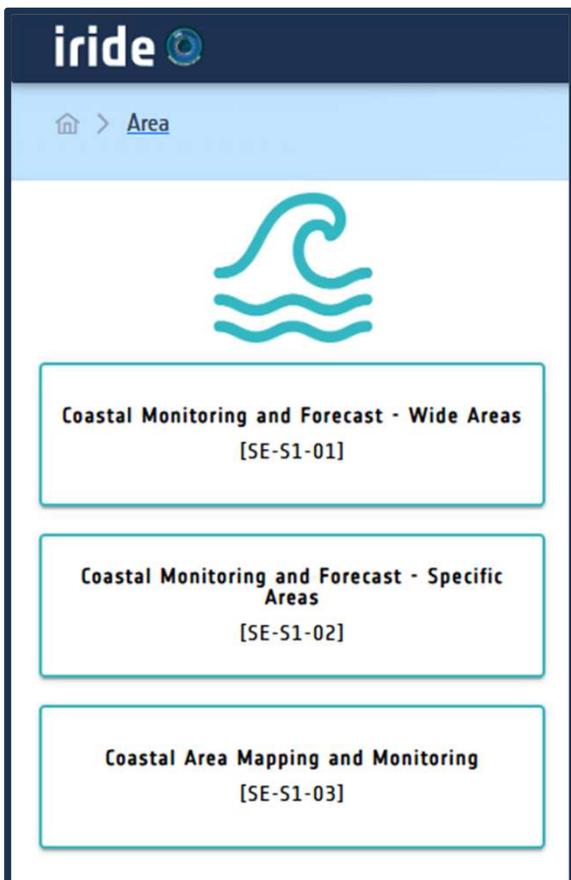


S1 – Coastal and Marine Monitoring

Servizi che forniscono dati e informazioni per il monitoraggio e la previsione degli **eventi che impattano l'ambiente marino e costiero**, sia marino sia terrestre.

Perché i servizi IRIDE ?

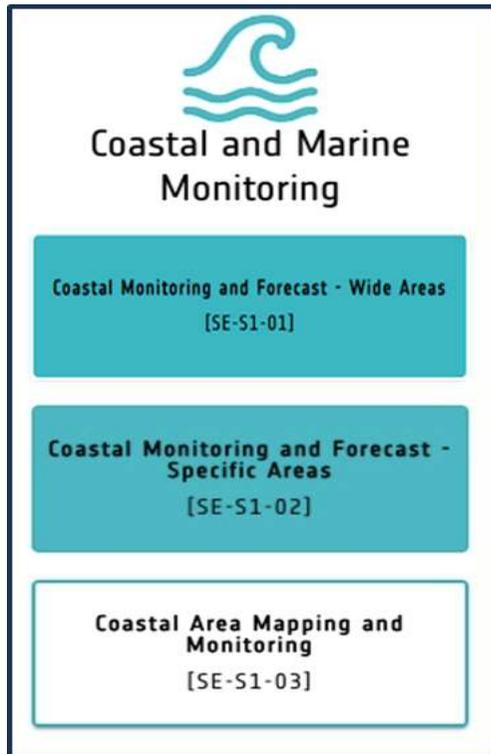
- **Dati e informazioni dettagliate** e tempestive su vari parametri marini e geomorfologici.
- **Estendono la capacità dei servizi esistenti** dal punto di vista informativo, di copertura e di frequenza temporale
- **Unico punto di accesso per un'ampia gamma di applicazioni**



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union – Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.

Coastal Monitoring and Forecast



Servizi a larga scala focalizzati sull'intera costa italiana (*Wide Areas*) e di dettaglio su specifiche aree costiere (*Specific Areas*) quali porti, siti di acquacoltura, piattaforme offshore, ecc.

- Set di prodotti/parametri di qualità delle acque basati su dati di Osservazione della Terra (OT) a risoluzione spaziale da 3m a 300m, a frequenza da giornaliera a ogni 5 giorni (costellazioni IRIDE, Sentinel-2 e Sentinel-3).
- Integrazione di prodotti/parametri fisici oceanografici basati su modellazione numerica, permettendo una comparazione con dati OT ed in situ
- Analisi di eventi estremi legati ad onde, livello del mare e temperatura

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.

Coastal Area Mapping and Monitoring



Coastal and Marine Monitoring

Coastal Monitoring and Forecast -
Wide Areas

[SE-S1-01]

Coastal Monitoring and Forecast -
Specific Areas

[SE-S1-02]

Coastal Area Mapping and
Monitoring

[SE-S1-03]

Servizi a supporto della valutazione del rischio morfologico costiero e dello stato degli habitat naturali costieri.

Tre principali componenti:

- Monitoraggio geo-morfologico della costa (linea e tipologia di costa, strutture costiere)
- Caratterizzazione delle aree costiere lato terra (consumo ed uso del suolo, DEM/DTM)
- Monitoraggio degli habitat ed ecosistemi emersi e sommersi

Prodotti forniti su base periodica, con analisi dei cambiamenti.

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



Monitoraggio marino-costiero da satellite

Giulio Ceriola, Planetek Italia
ceriola@planetek.it

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019' and 'Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



S1 Coastal and Marine Monitoring

Focus sul monitoraggio completo dello stato dell'ambiente marino costiero



Monitoraggio della qualità delle acque costiere

Caratterizzazione dell'ambiente terrestre costiero

Descrizione geomorfologica della linea di costa

Descrizione del fondale marino costiero



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union – Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



S1 Coastal and Marine Monitoring

Qualità delle acque

Caratterizzazione fisico-biologica dello stato delle acque marine costiere italiane attraverso la misurazione di parametri di qualità dell'acqua.



Area di interesse: Mari Italiani, 12 miglia dalla linea di base

Frequenza di aggiornamento da 1 a 5 giorni

Risoluzione spaziale da 3 a 300 m

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019' and 'Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

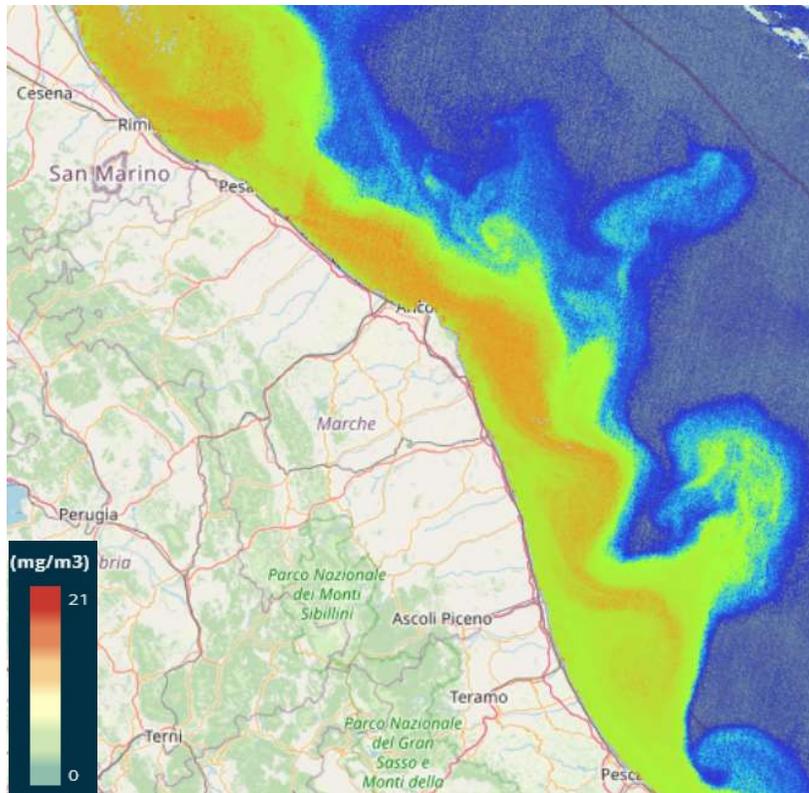


S1 – Coastal and Marine Monitoring

Prodotti qualità delle acque ad alta frequenza (giornalieri)

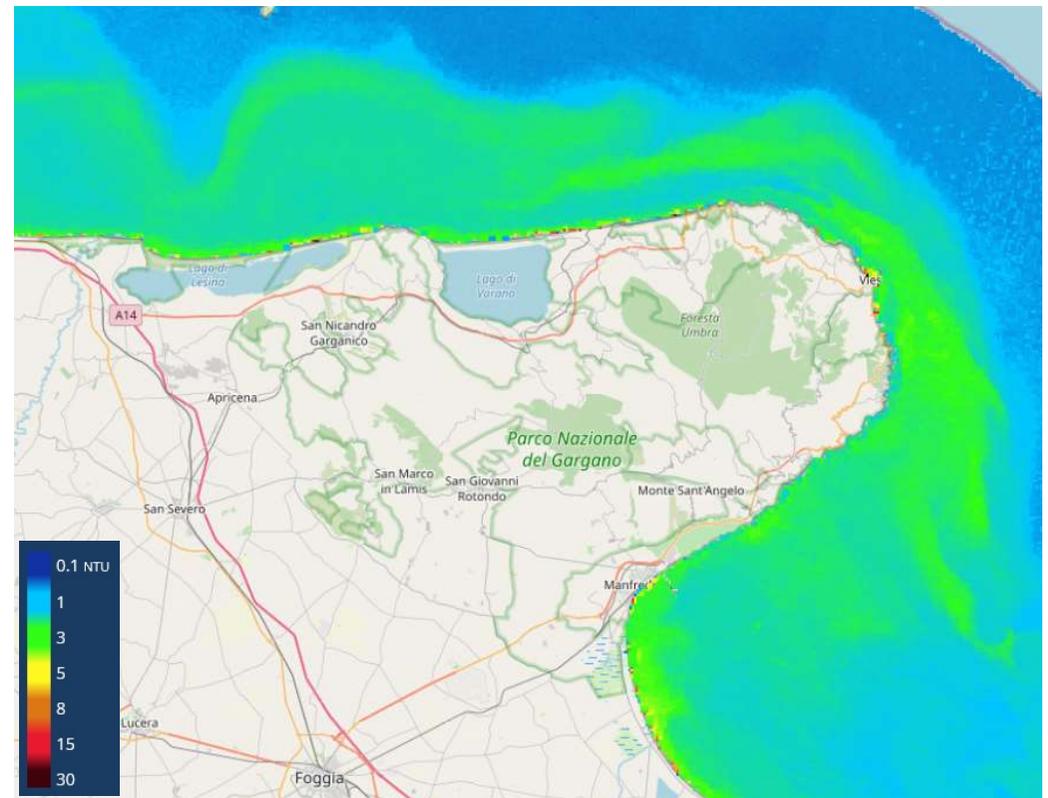
S1-01

Concentrazione
clorofilla



S1-01

Torbidità

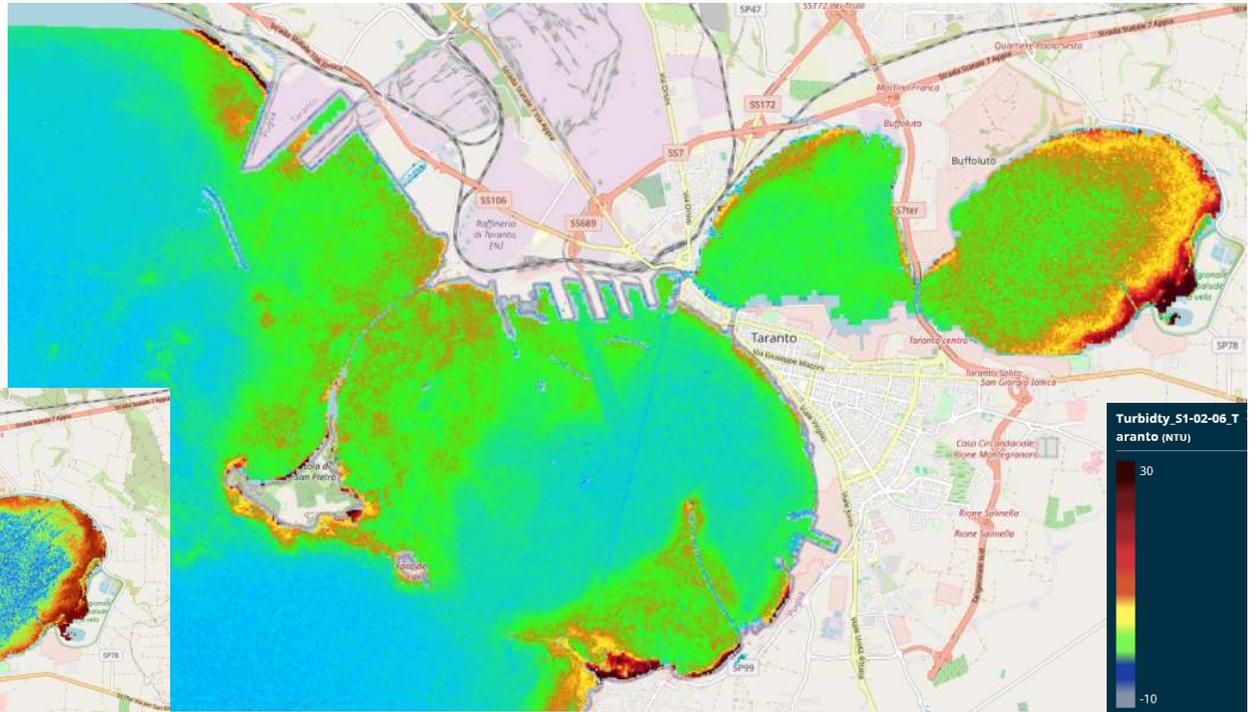
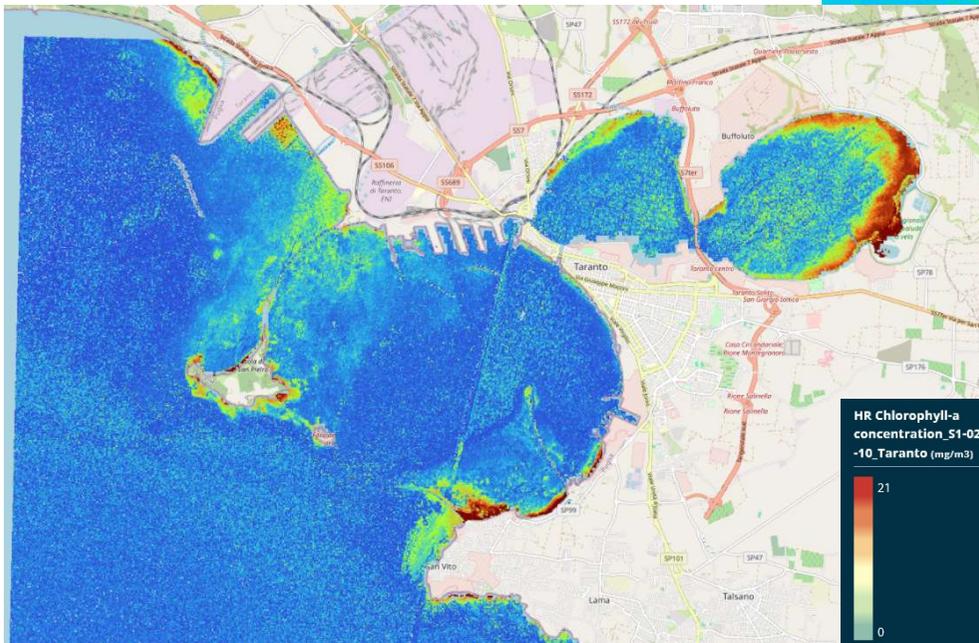


S1 – Coastal and Marine Monitoring

Prodotti qualità delle acque ad alta risoluzione

S1-02

Concentrazione
clorofilla (HR)



S1-02

Torbidità
(HR)

S1 Coastal and Marine Monitoring

Fondale marino ed uso del mare

Uso del mare: alcuni prodotti sono specificamente orientati al monitoraggio delle attività antropiche nelle acque marine costiere.



Fondale marino: alcuni prodotti sono dedicati al monitoraggio dello stato ambientale dei fondali nelle aree costiere.

S1 – Coastal and Marine Monitoring

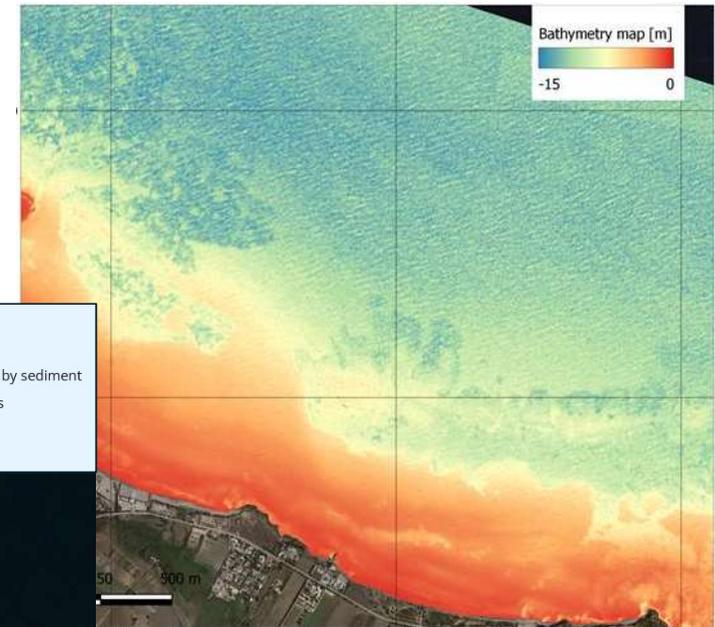
Monitoraggio costiero lato terra

S1-03

Densità di traffico navale

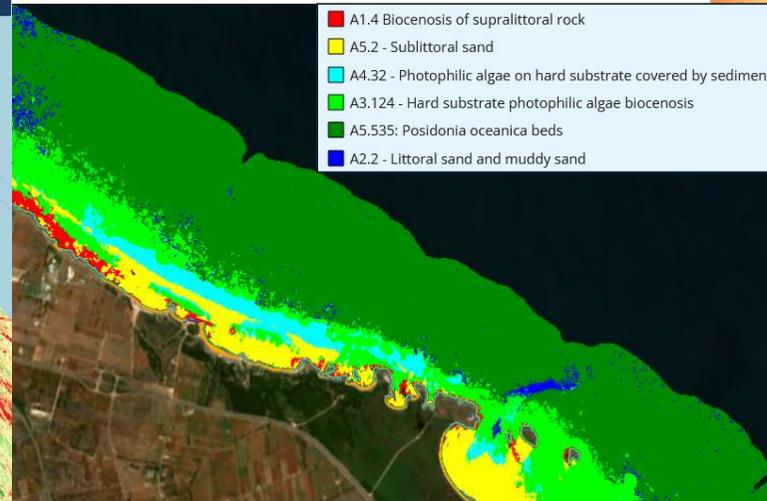
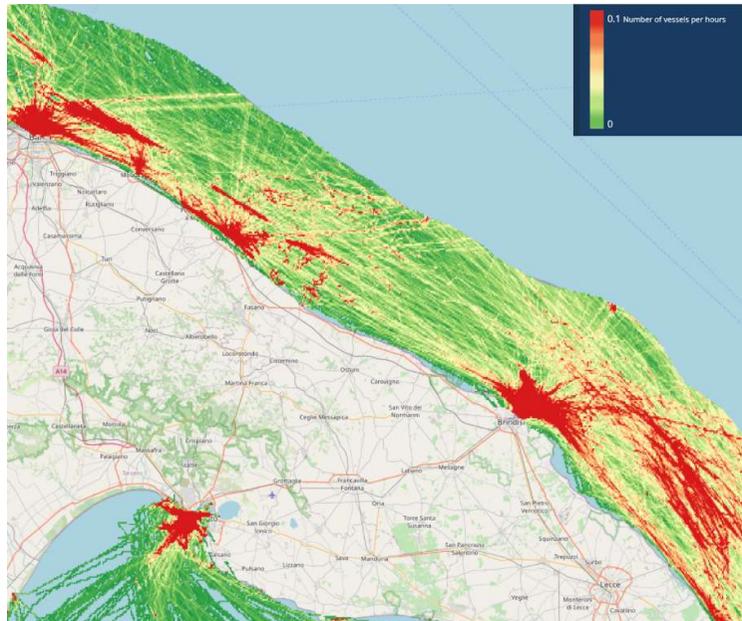
S1-03

Vegetazione costiera sommersa



S1-03

Batimetria costiera



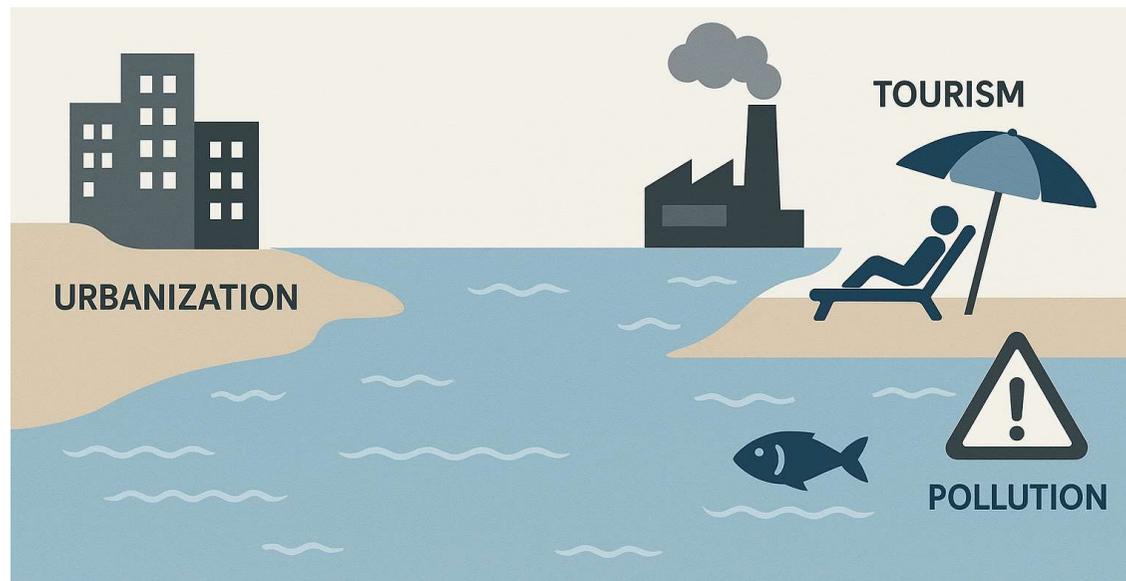
About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.

S1 Coastal and Marine Monitoring

Ambiente terrestre costiero

Questi prodotti sono finalizzati al monitoraggio della pressione antropica sugli ecosistemi costieri.



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU

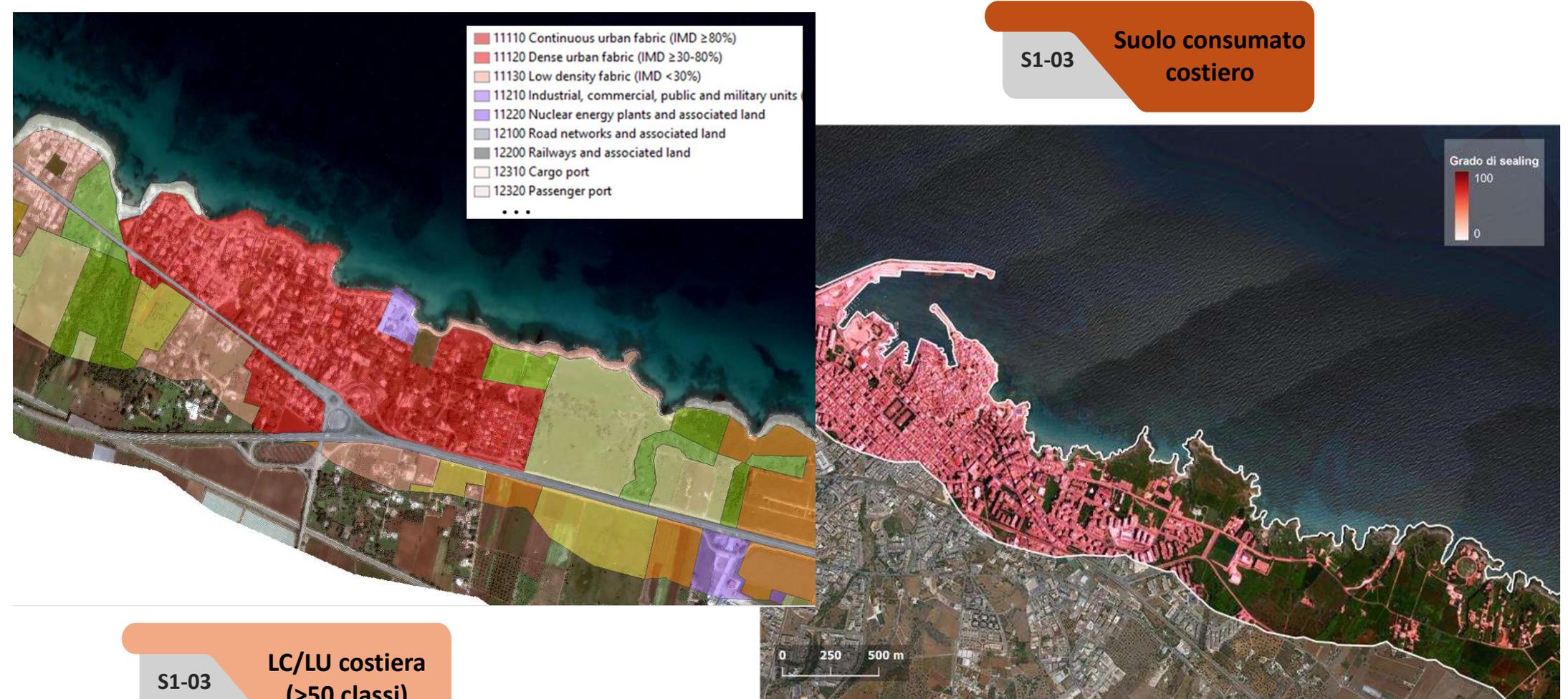


Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



S1 – Coastal and Marine Monitoring

Monitoraggio costiero lato terra



S1-03

LC/LU costiera
(>50 classi)

S1 Coastal and Marine Monitoring

Caratterizzazione geomorfologica della linea di costa

Descrizione della linea di costa sotto il profilo geomorfologico

Delineazione della linea di costa

Monitoraggio delle spiagge

Strutture costiere

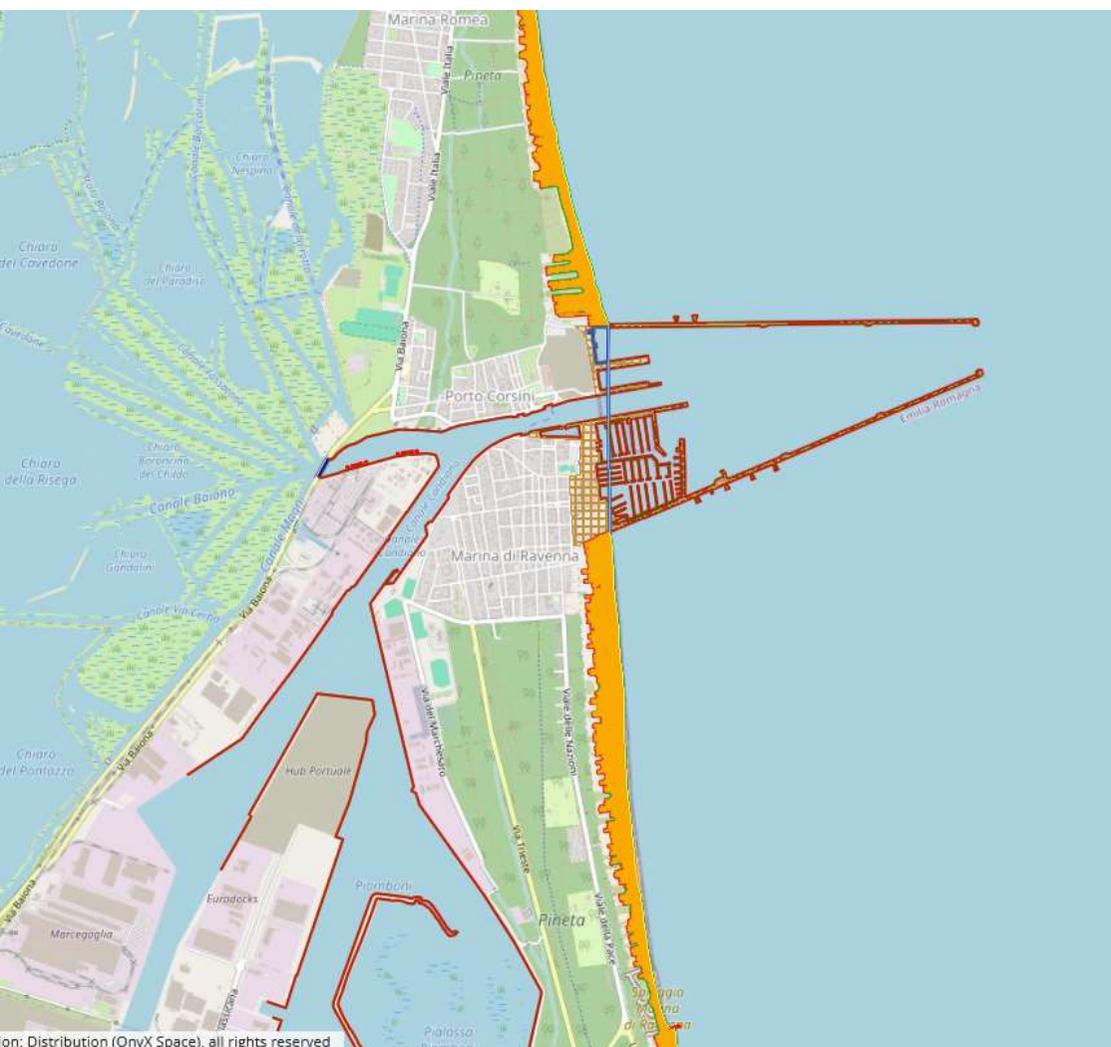


About the IRIDE constellation. The IRIDE constellation is a programme of the European Union – Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.

S1 – Coastal and Marine Monitoring

Monitoraggio della linea di costa



on: Distribution (OnyX Space), all rights reserved

S1-03

Linea di costa

3 classi
(Naturale, artificiale,
virtuale)

S1-03

Caratterizzazione
linea di costa

17 classi

S1-03

Strutture
costiere

4 classi
(Portuali, residenziale,
commerciali, industriale)

S1-03

Linea di
retrospiaggia

3 classi
(Naturale, artificiale,
virtuale)

S1-03

Spiagge

2 classi
(Sabbiosa, ciottolosa)

Monitoraggio e validazione modellistica marino- costiera

Giovanni Coppini, CMCC
giovanni.coppini@cmcc.it
gusy.fedele@cmcc.it

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019' and 'Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



The marine-coastal modeling monitoring and validation includes following products:

- **Validation report:** comparison of ocean coastal models with EO and in-situ data;
- **Geospatial product: marine monitoring and forecast** of sea waves, physical oceanographic parameters on specific areas - harbours, aquaculture, off-shore platforms and **extreme events analysis** for the ocean variables (sea level, sea surface temperature and waves).

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and 'Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



Validation report includes a comparison of hourly model outputs with EO-derived and in-situ observations.
 Available for Wide and Specific areas (ports and surrounding areas, offshore platforms etc).
 Available variables: Temperature, Salinity, Sea level, Sea waves, Chl-a.
 Other models from the users can be integrated to the validation tool following standard integration protocol.

Error Metrics:

RMS, Median Bias, CORR, Difference

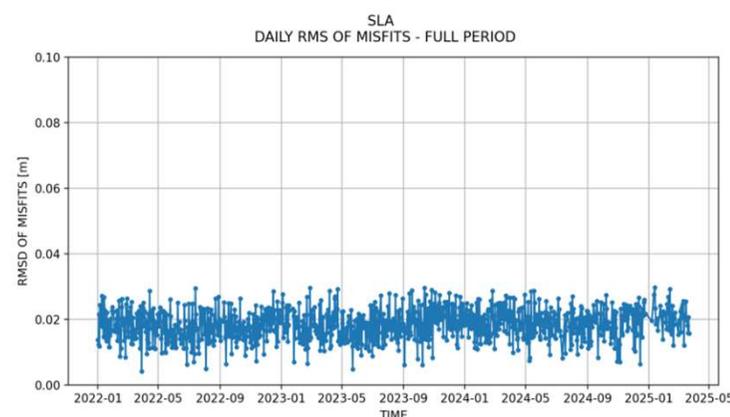
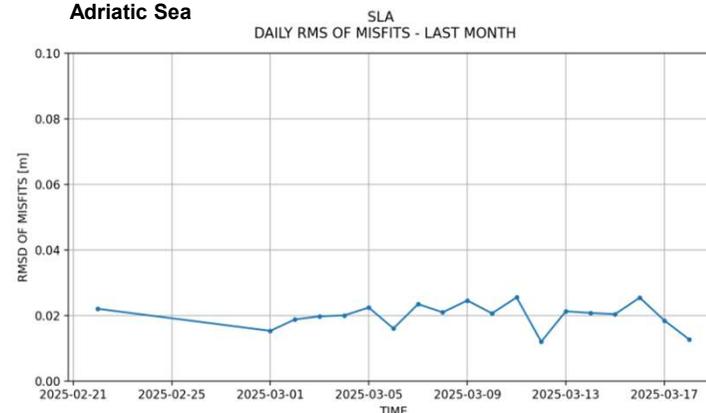
Reference data:

EO-derived (Copernicus Marine Service) and in-situ data (e.g ARGO floats Rete Ondametrica Nazionale)

Depth: *1m-500m (Salinity, Temperature)*

Models: *SHYFEM-MPI, WW3, BFM*

Example: Sea level Anomaly RMS of misfits over the Adriatic Sea



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of EO PNRR IRIDE PROGRAMME.

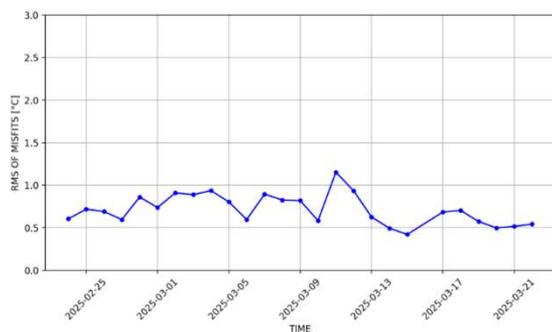
Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



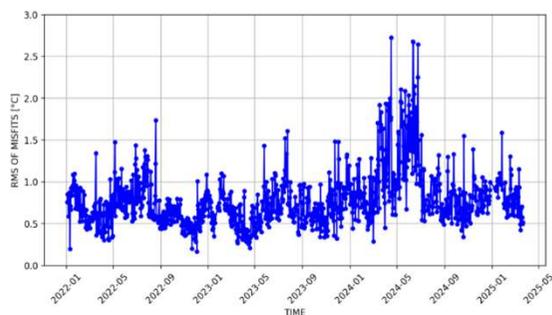
Validation report examples (Wide areas)

Sea Surface Temperature RMS of misfits over the Adriatic Sea

SST DAILY RMS OF MISFITS - LAST MONTH - Adriatic IT Coast

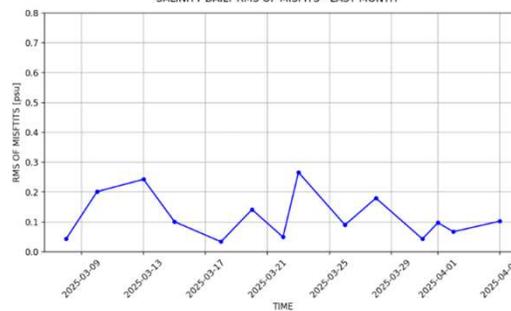


SST DAILY RMS OF MISFITS - FULL PERIOD - Adriatic IT Coast

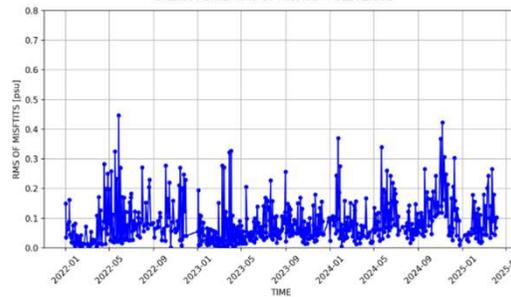


Sea Salinity RMS of misfits over the Adriatic Sea at depth 30m

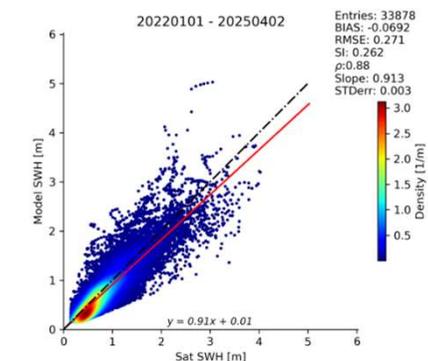
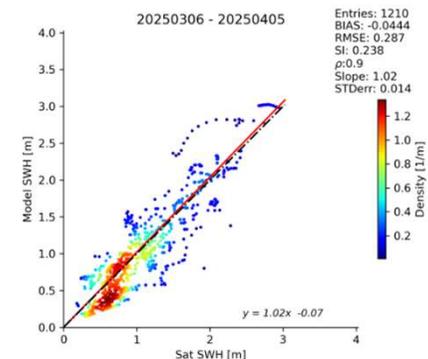
DEPTH [30] m
SALINITY DAILY RMS OF MISFITS - LAST MONTH



DEPTH [30] m
SALINITY DAILY RMS OF MISFITS - FULL PERIOD



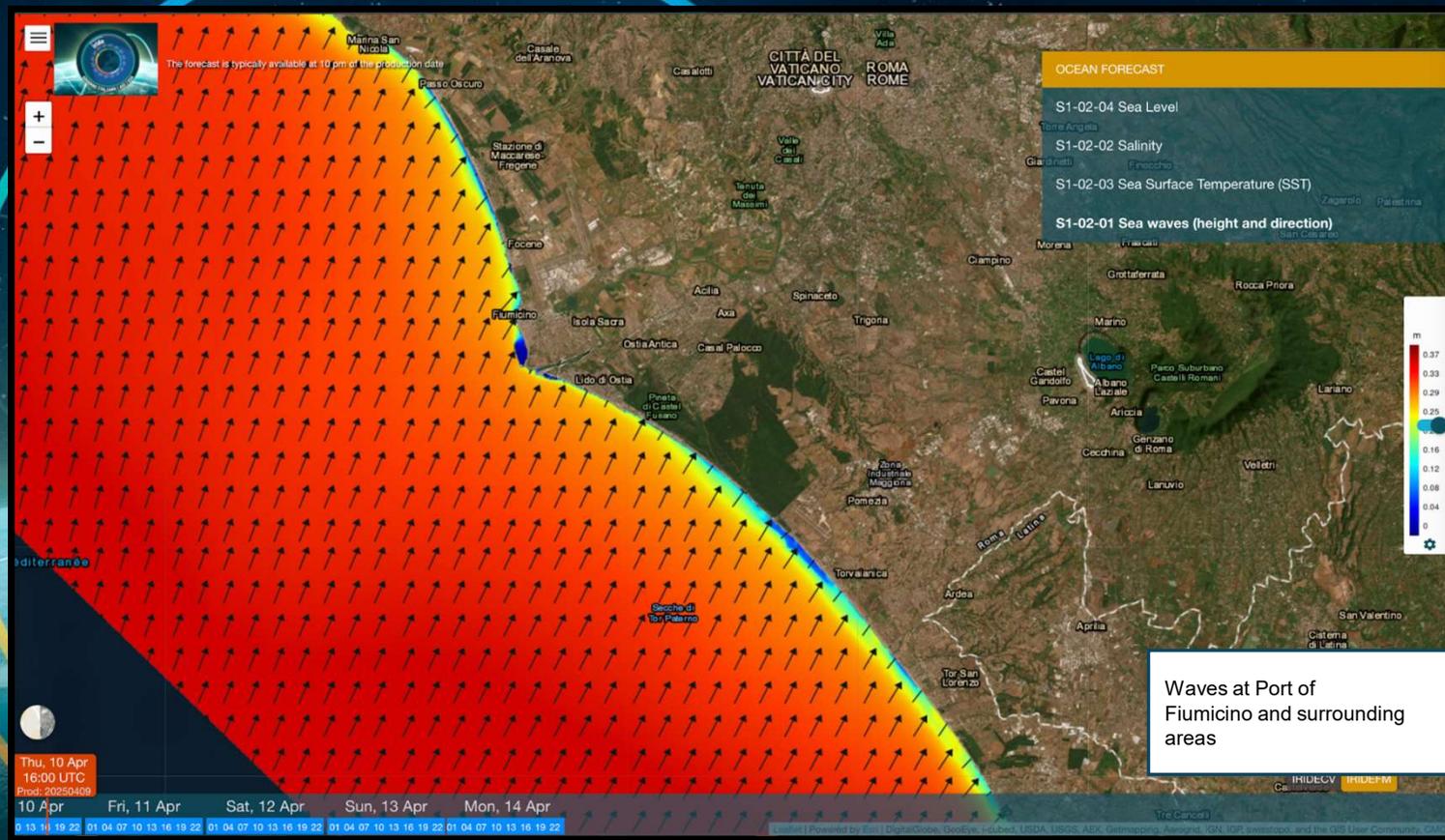
Significant Wave Height validation over the Adriatic coast



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019' and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of EO PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion of the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.

Available for the physical oceanographic parameters and sea waves on specific areas - harbors, aquaculture and off-shore platforms.



Waves at Port of Fiumicino and surrounding areas

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



Provides information of Sea Temperature and Salinity on the water column at depth of 0, 5, 10, 20, 50, 200 m.



SST at Port of Civitavecchia and surrounding areas

About the IRIDE constellation. The IRIDE constellation is a programme of the European Union – Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of EOPNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU

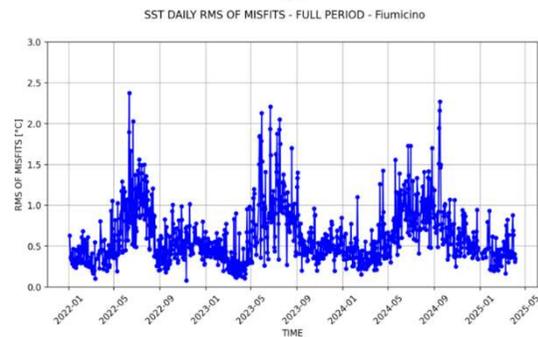
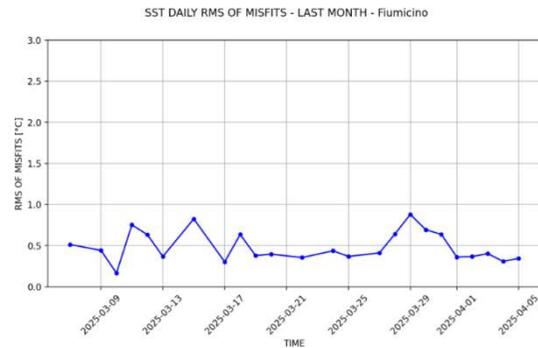


Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

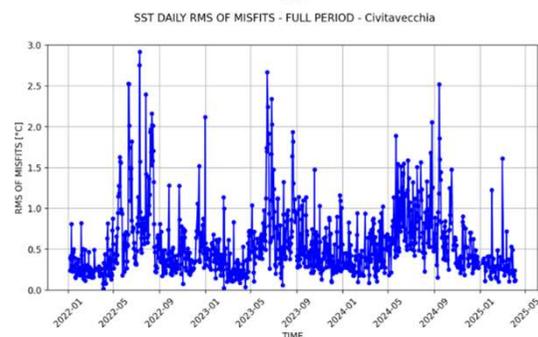
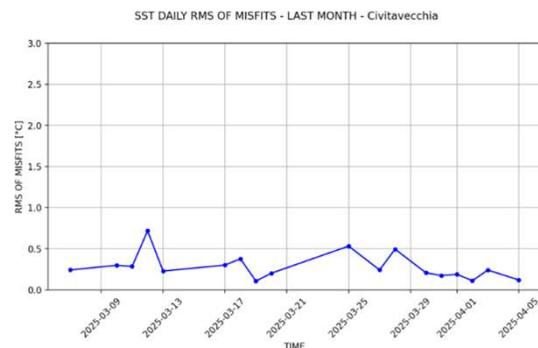


Validation report examples (Port areas)

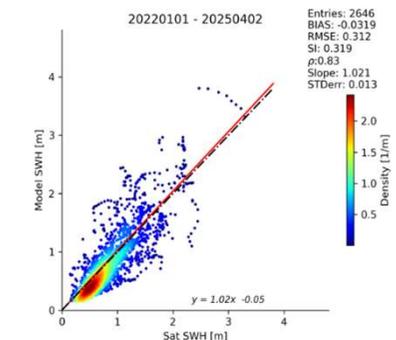
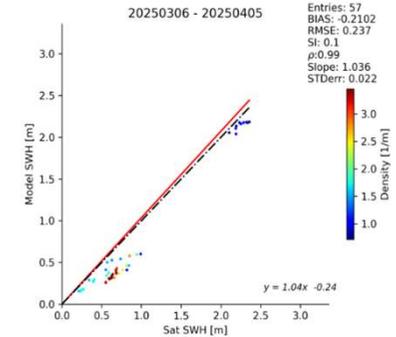
Sea Surface Temperature RMS misfits at Port of Fiumicino and surrounding areas



Sea Surface Temperature RMS misfits at Port of Civitavecchia and surrounding areas



Significant Wave Height validation over the Port of Taranto and surrounding areas



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019' and 'Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of ED PNRR IRIDE PROGRAMME.

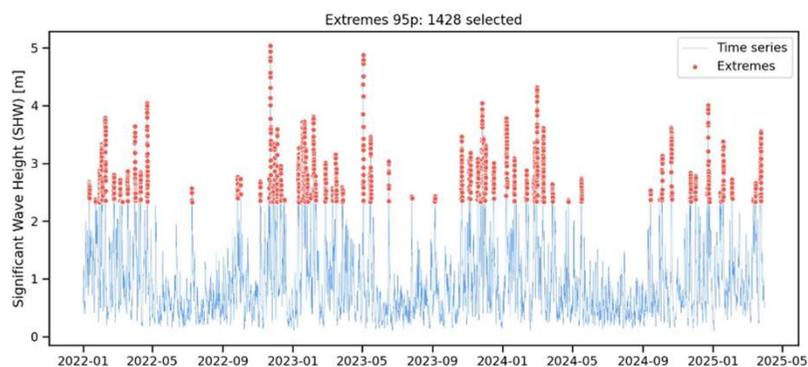
Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.

By October 2025 a new product of extreme events analysis for the ocean variables (sea level, sea surface temperature and waves) will be available within IRIDE Phase 2.

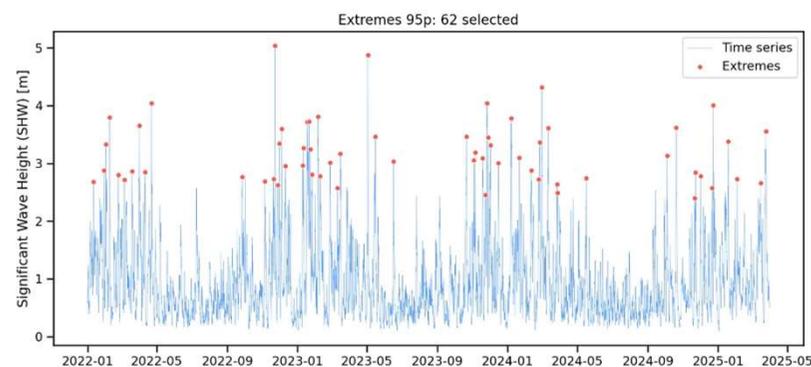
Each event is considered an extreme event if it satisfies the following requirements:

- Exceeds the threshold
- Has a duration of more than N hours (N is defined according to the variable - Sea Surface Height or Significant Wave Height)
- Two extremes are considered independent if they are more than N hours apart

All values exceeding a threshold



Selection of the extreme events



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic, pursuant to Article 1, paragraph 254, of the Italian Law 160/2019 and Funded by the Presidency of the Council of Ministers from the Complementary Fund carried out under an ESA Contract for the purposes of EO PNRR IRIDE PROGRAMME.

Disclaimer. Views expressed herein can in no way be taken to reflect the official opinion the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic. Views and opinion expressed are those of the author(s) only and the European Union/European Commission/ESA/Presidency of Council of Ministers of the Italian Republic cannot be held responsible for any use which may be made of the information contained therein.



Funded by
the European Union
NextGenerationEU



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

