

SOCIB y el Repositorio de Datos Oceanográficos de SOCIB: hacia datos FAIR y TRUST

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FAIRsFAIR National Roadshow Series (Spain): Green Data Market for Research & the Role of Repositories
23 de Junio de 2021

www.socib.es

Resumen

- **SOCIB: contexto y gestión de datos oceanográficos**
- **FAIR + CoreTrustSeal**
- **El proceso de certificación FAIR+CoreTrustSeal**
- **El repositorio de datos oceanográficos de SOCIB**
- **Siguientes pasos**
- **Expectativas**

SOCIB: contexto y gestión de datos

¿Qué es SOCIB?

Es un sistema de observación oceánica multiplataforma y de predicción, con sede las Islas Baleares, investigando desde la costa hasta el mar abierto, desde eventos hasta el Cambio Climático.

3 EJES

- Ciencia
- Desarrollo Tecnológico
- Sociedad

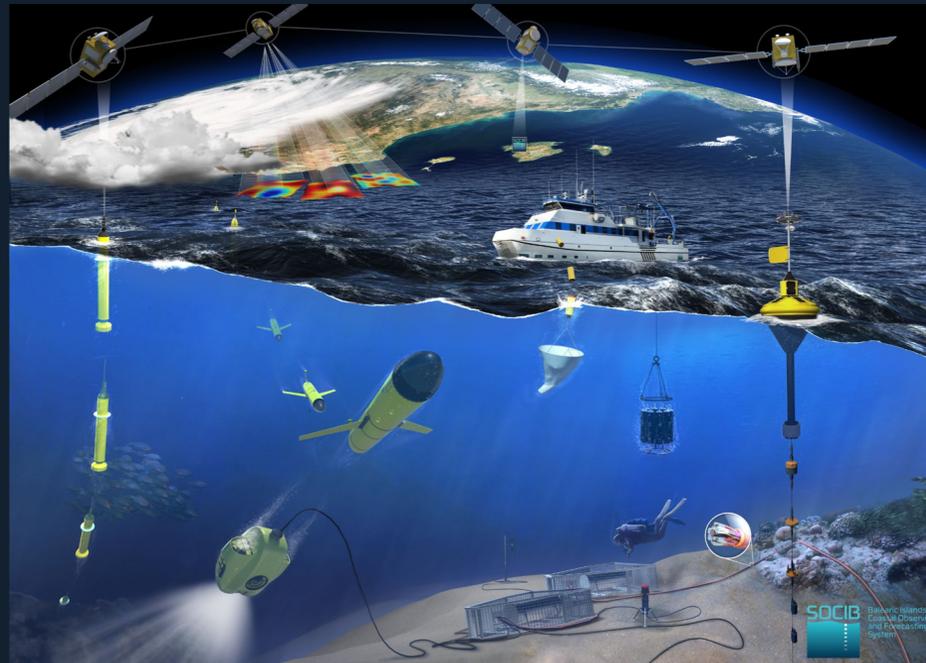
PRINCIPIOS DE DATOS ABIERTOS

MODOS DE ACCESO

- Datos libres y abiertos
- Programas de monitorización permanentes
- Acceso abierto a infraestructuras

EVALUACIÓN

- Cada 4 años



Desde 2014 SOCIB está incluido en el mapa de Infraestructuras Científicas y Técnicas Singulares (ICTS)

CRONOLOGÍA

- Propuesta en 2006 y aprobado en 2009
- Diseñado e implementado: 2010-2013

PRODUCCIÓN CIENTÍFICA (KPIs):

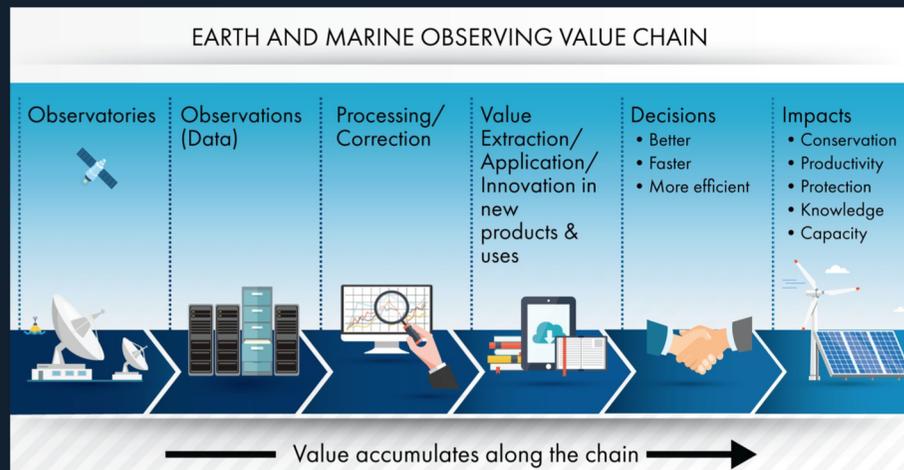
- 168 publicaciones, 2011-2020
- 16 proyectos Europeos, 2014-2020
- 7 contratos con el sector privado
- 7 colaboraciones con el sector público
- Financiación externa > 5M€

SOCIB: contexto y gestión de datos

Gestión de datos en SOCIB

... en el contexto de:

- *la Cadena de Valor Añadido de la Observación del Océano*
- *el Ciclo de Vida del Dato*



(Hodgson-Johnston, 2016)

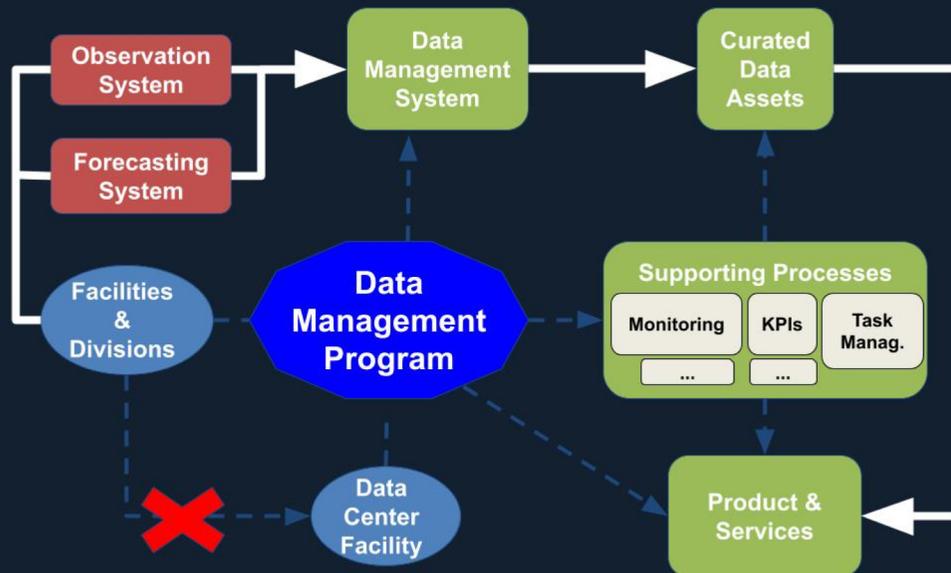


Los datos de observación marina tienen el potencial para una gran innovación a través de la colección de datos, su análisis y posterior aplicación

SOCIB: contexto y gestión de datos

Estado del arte (antes de FAIRsFAIR)

Contexto de los datos custodiados por SOCIB antes del proceso de certificación



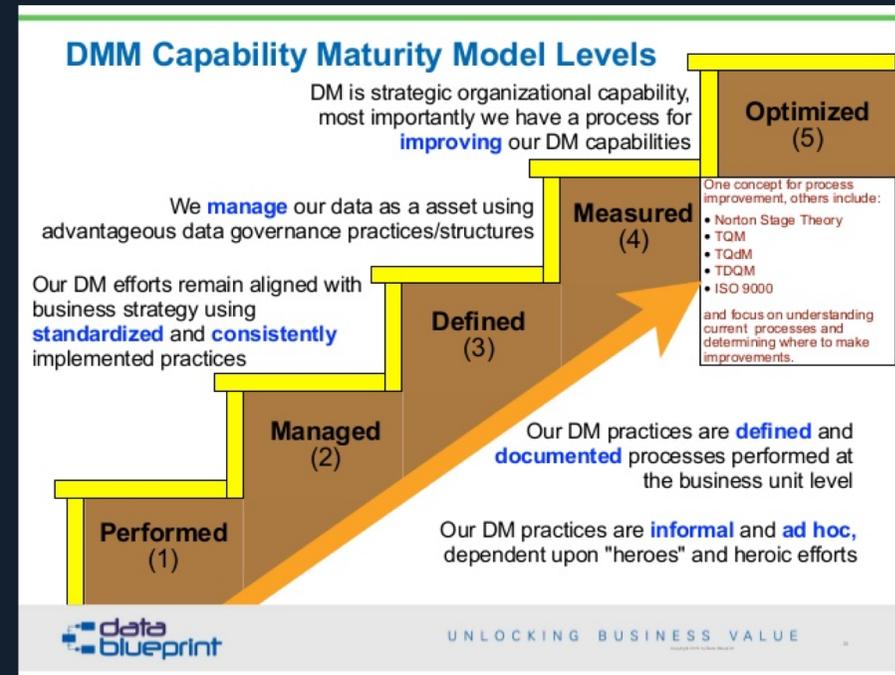
- El repositorio de datos no existe como un componente con identidad propia.
- Se cumplen con los requerimientos de la comunidad designada.
- Se cumplen los principios FAIR.
- Procesos gestionados pero parcialmente definidos.
- No existe un plan de preservación.
- La continuidad de acceso es limitada.
- No se ha definido la confiabilidad del repositorio.
- Existen planes de mejora y un marco general.

SOCIB: contexto y gestión de datos

Estado del arte (antes de FAIRsFAIR)

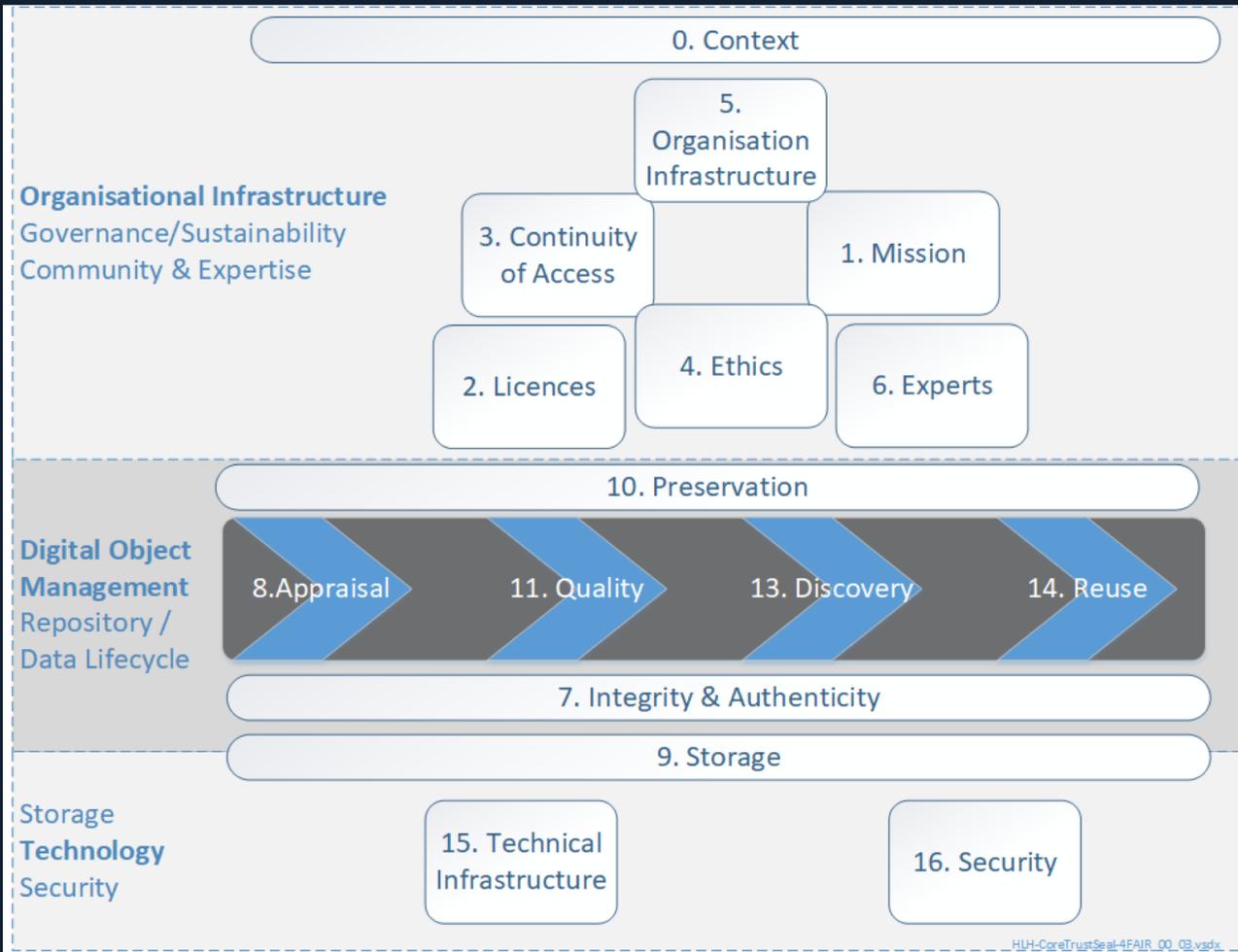


- Nuevo Programa de Gestión de Datos: comienza en 2018.
- Basado en el *Data Management Maturity Model* del *CMMI institute*.



CoreTrustSeal + FAIR

Certificación CoreTrustSeal: 17 requerimientos



CoreTrustSeal + FAIR

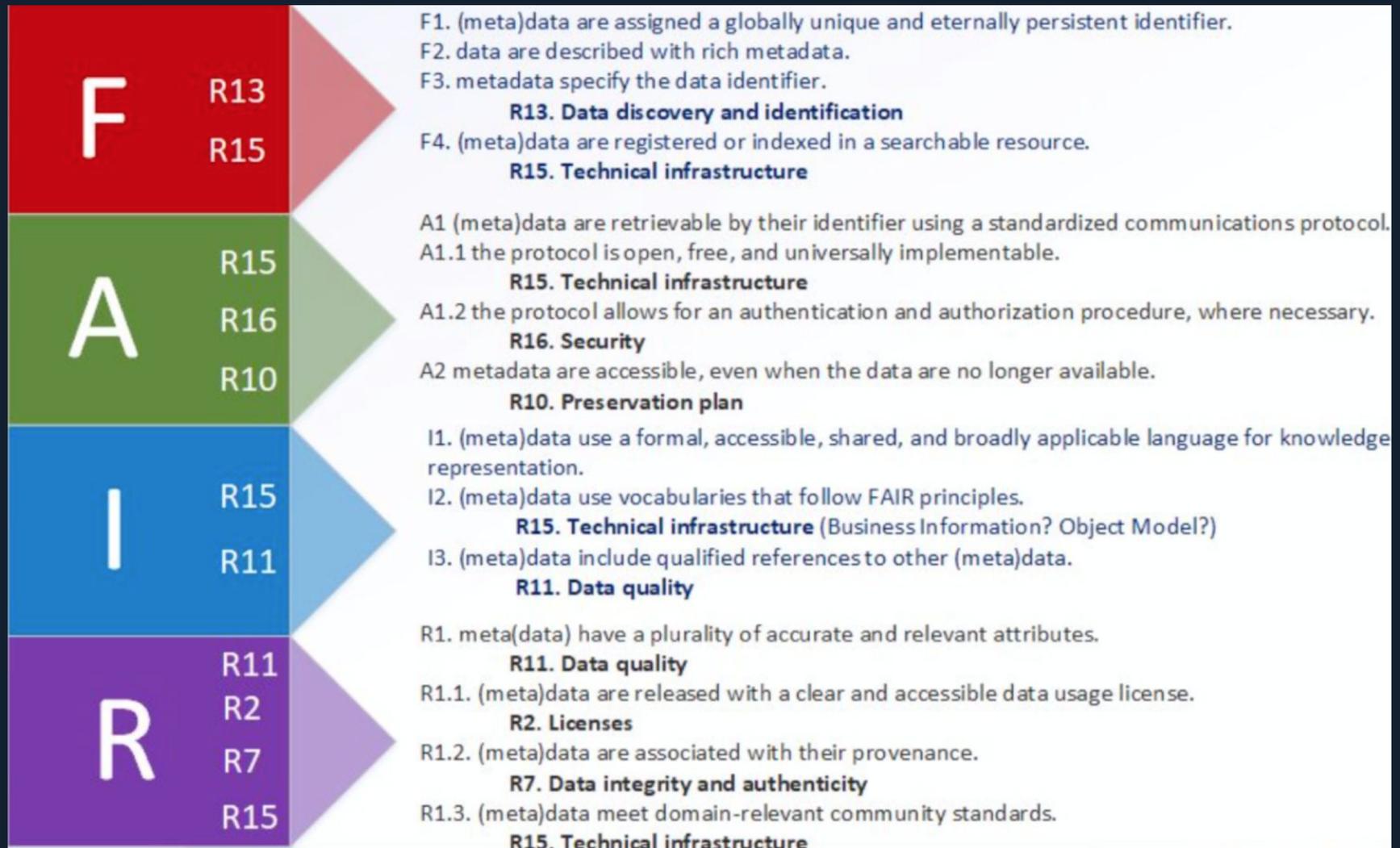
Certificación CoreTrustSeal: 17 requerimientos



FAIR DATA PRINCIPLES

CoreTrustSeal + FAIR

CoreTrustSeal + FAIRsFAIR



Convocatoria del proyecto FAIRsFAIR

¿Por qué nos embarcamos en esta aventura?

F	R13	F1. (meta)data are assigned a globally unique and eternally persistent identifier.
	R15	F2. data are described with rich metadata.
		F3. metadata specify the data identifier.
		R13. Data discovery and identification
A		F4. (meta)data are registered or indexed in a searchable resource.
		R15. Technical infrastructure
	R15	A1 (meta)data are retrievable by their identifier using a standardized communications protocol.
	R16	A1.1 the protocol is open, free, and universally implementable.
I	R10	R15. Technical infrastructure
		A1.2 the protocol allows for an authentication and authorization procedure, where necessary.
		R16. Security
		A2 metadata are accessible, even when the data are no longer available.
R		R10. Preservation plan
	R15	I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
	R11	I2. (meta)data use vocabularies that follow FAIR principles.
		R15. Technical infrastructure (Business Information? Object Model?)
R		I3. (meta)data include qualified references to other (meta)data.
		R11. Data quality
	R11	R1. meta(data) have a plurality of accurate and relevant attributes.
	R2	R11. Data quality
	R7	R1.1. (meta)data are released with a clear and accessible data usage license.
	R2. Licenses	
	R1.2. (meta)data are associated with their provenance.	
	R7. Data integrity and authenticity	
	R1.3. (meta)data meet domain-relevant community standards.	
	R15. Technical infrastructure	



Oportunidad alineada con objetivos estratégicos de SOCIB:

- CONFIABILIDAD
- FAIR
- GESTIÓN DE DATOS

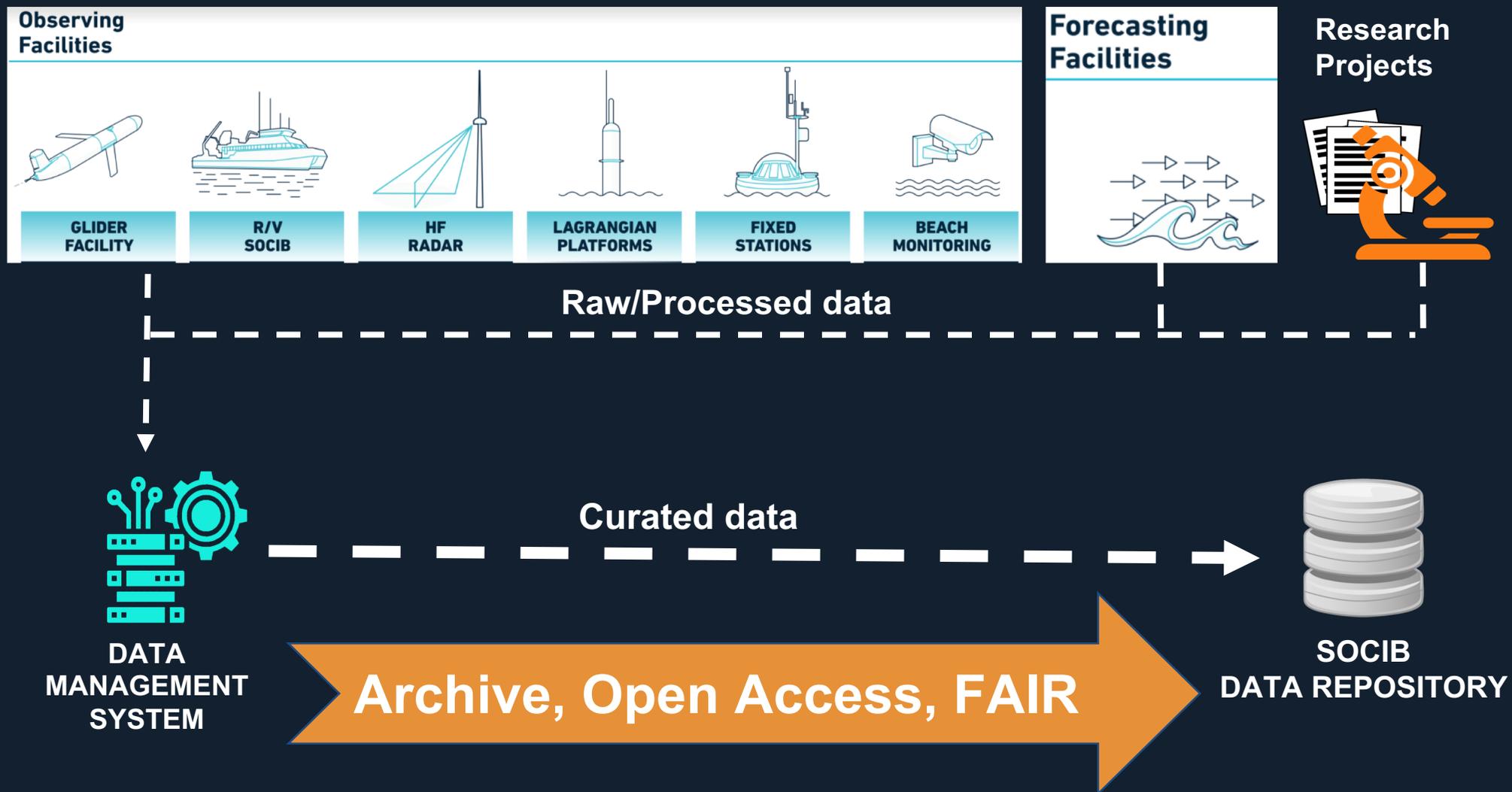
El proceso de certificación CoreTrustSeal

¿Qué hemos hecho hasta ahora?

- Grupo de trabajo:
 - Análisis de requerimientos (R0-R16)
 - Workshops y reuniones (FAIRsFAIR)
- Identificación de carencias / áreas de mejora
 - Continuidad de Acceso (R3)
 - Plan de Preservación (R10)
- Alineamiento del nuevo Plan Estratégico 2021-2024 para garantizar y facilitar el proceso de mejora.
- Certificación bajo revisión: primer intento.
- **Identificación y ámbito del Repositorio de Datos Oceanográficos de SOCIB.**

El repositorio de datos oceanográficos

Función del Repositorio de Datos



El repositorio de datos oceanográficos

Operational data

thredds.socib.es

Servidor de datos: la estructura y organización de los datos responde a criterios meramente operacionales. Además ofrece acceso mediante servicios estándares (OPenDAP, WMS).



Catalog <http://thredds.socib.es/thredds/catalog.html>

The SOCIB Thredds Data Server allows downloading and accessing the SOCIB Data Repository through a variety of standard protocols such as OPenDAP and WMS. The present catalog structure responds to operations and therefore it might result complex for average users. Please visit SOCIB Data Catalog instead for a more friendly interface in this regard.

Dataset	Size	Last Modified
SOCIB DATA		
observational		
mooring/		
drifter/		
atv/		
bf_radar/		
research_vessel/		
aggregated_data/		
operational_models		
oceanographical		
hydrodynamics		
wspg/		

Data Catalog

apps.socib.es/data-catalog

Catálogo de productos de datos: datos operacionales en la mejor calidad disponible, empaquetados según criterios científicos. Los productos de datos tienen un DOI asignado.



SOCIB DATA CATALOG

SOCIB Data Catalog is a browser-like application built on top of the SOCIB API services that enables a friendly discovery, visualization and download of the data available at SOCIB Data Repository. Both the SOCIB Data Catalog and SOCIB API serve as the most significant administration and SOCIB Repository infrastructure components behind the so-called 'SOCIB DATA CATALOG'.

SOCIB Data Catalog is the recommended point of entry for non-operational users that are interested in the oceanographic data produced by the observing facilities of the Balearic Islands Coastal Observing and Forecasting System (COFOS). Operational users are encouraged to consider this application as a thin Client of SOCIB API, the actual service to be used for accessing data in an operational way.

143 products found

- ALBUROSA-001A - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001B - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001C - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001D - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001E - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001F - PRODUCTO**
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- ALBUROSA-001G - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001H - PRODUCTO**
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- ALBUROSA-001I - PRODUCTO**
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- ALBUROSA-001J - PRODUCTO**
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- ALBUROSA-001K - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001L - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001M - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001N - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001O - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001P - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001Q - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001R - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001S - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001T - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001U - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001V - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001W - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001X - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001Y - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.
- ALBUROSA-001Z - PRODUCTO**
A fixed platform equipped experiment (ALBUROSA) was conducted in 2016 in the eastern Balearic Channel.

API M2M

api.socib.es

Interfaz máquina a máquina API REST para acceder a los datos del repositorio e información de contexto.



SOCIB API

The SOCIB API lets you discover in a fast and easy way what products are made available by SOCIB and access the data related to them, where each product is a combination of related data sources by a virtual relation, built in a language of queries. The data sources can come from observational platforms (e.g. oceanographical buoy, coastal stations, weather stations, autonomous underwater vehicles, drifter buoys, ...) and in later versions from forecasting models, images and more.

Forms of service

Search 2.0

data-products

- GET /data-products/** Provides a list of products matching the requirements given by the query parameters.
- GET /data-products/{id}/** Retrieves a specific product given by its id.
- GET /data-products/{id}/metadata** Retrieves metadata of a specific product given by its id. Currently only data products with a DOI (DOI:10.11080 following DataCite schema).

platforms

- GET /platforms/** This endpoint allows listing all platforms with indexed datasets. Optionally can be filtered by platform type.
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instruments

El repositorio de datos oceanográficos

Operational data

Data Catalog

API M2M

Catalog <http://thredds.socib.es/thredds/catalog.html>



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API REST para
repositorio de

Dataset	Size	Last Modified
<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> observational mooring/ drifter/ auv/ hf_radar/ research_vessel/ aggregated_data/ operational_models oceanographical <ul style="list-style-type: none"> hydrodynamics <ul style="list-style-type: none"> wmop/ 		

API REST para repositorio de

where each product is a combination of related data sources by a virtual relation: weather stations, autonomous underwater vehicles, drift buoys, ... and in later

Authenticate

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143 products found

SEARCHED FOR: PLATFORMS

A float platform equipped with ALBOROCC was conducted in 2016 in the Balearic Islands. Contact: info@socib.es or [+35490000000](tel:+35490000000)

SEARCHED FOR: DATA

Sampling floats have been and hydrographic variables in the Balearic during the summer. Contact: info@socib.es or [+35490000000](tel:+35490000000)

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data-products

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- GET /data-products/{id}/metadata Retrieves metadata of a specific product given by its id. Currently only data products with a DOI (DOI:10.1100/1000) following DataCite schema.

platforms

- GET /platforms/ This endpoint allows listing all platforms with indexed datasets. Optionally can be filtered by platform type.
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API M2M



PRODUCT USER MANUAL (PUM)

SOCIB DATA CATALOG

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Filter

Name

From date from date

To date to date

Status - Select status

Variable Select variables

Platform type - Select platform type

Instrument type - Select instrument type

Feature type - Select feature type

Bounding box

min longitude min latitude max longitude max latitude

Show map

Sort by

Filter Clear

ST para e

191 products found

1 2 3 ... 24 >>



ALBOREX 2014 - PERSEUS

A multi-platform synoptic experiment (ALBOREX) was conducted in 2014 in the eastern Alboran... (more)

<https://doi.org/10.25704/z5y2-qpye>

19/05/2014 → 18/08/2016

10/01/2019

- Surface drifter
- Profiler drifter
- Research Vessel
- Glider
- Trajectory
- Trajectory profile irregular
- Trajectory 3d
- Trajectory profile
- Sea water temperature
- Direction of sea water velocity
- Sea water speed
- Sea water salinity
- Air temperature
- Wind from direction
- Wind speed



BFLY PRECARTEX

Butterfly cruise serving as Engineering Trial for Slocum scientific mission

13/05/2014 → 19/05/2014

10/03/2015

- Glider
- Trajectory 3d
- Trajectory profile
- Sea water salinity
- Sea water temperature



BLUEFINTUNA TSK BALEARICSEA JUN2013

Sampling bluefin tuna larvae and hydrographic variables in the Balearic sea during the spawning... (more)

20/06/2013 → 13/07/2013

12/12/2016

- Research Vessel
- Trajectory
- Trajectory 3d
- Trajectory profile
- Sea water salinity
- Sea water temperature
- Direction of sea water velocity
- Sea water speed



BLUEFINTUNA TSK BALEARICSEA JUN2014

Sampling bluefin tuna larvae and hydrographic variables in the Balearic sea during the spawning... (more)

18/06/2014 → 02/07/2014

12/12/2016

- Research Vessel
- Trajectory 3d
- Trajectory profile
- Direction of sea water velocity
- Sea water speed
- Sea water temperature

a combination of related data sources by a virtual relation, from underwater vehicles, drifter bouys, ... and in later

Authenticate

using DataCite schema.

El repositorio de datos oceanográficos

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143 products found

SEARCHED DATA PRODUCTS	API PRODUCTS
<p>ALBUQUERQUE PLATFORM</p> <p>A fixed platform equipped with ALBUQUERQUE was installed in 2016 in the eastern Balearic Channel.</p> <p> View details Download </p>	<p>Authenticating users serving as Engineering Trial for Socium scientific research.</p> <p> View details Download </p>
<p>ALBATROSS PLATFORM FOR SEA SURFACE ANALYSIS</p> <p>Sampling SeaBuoy has been and hydrographic variables in the Balearic Sea during the sampling period.</p> <p> View details Download </p>	<p>ALBATROSS PLATFORM FOR SEA SURFACE ANALYSIS</p> <p>Sampling SeaBuoy has been and hydrographic variables in the Balearic Sea during the sampling period.</p> <p> View details Download </p>

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Interfaz máquina a máquina API REST para acceder a los datos del repositorio e información de contexto.



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Methods of service

Search 2.0

Authenticating

data-products

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platforms

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Instruments

El repositorio de datos oceanográficos

Operational data

SOCIB API 1.0.0 OAS3

[schema_socib.json](#)

The SOCIB API lets you discovery in a fast and easy way what products are made available by SOCIB and access the data related to them, where each product is a combination of related data sources by a virtual relation, such as a campaign or project. The data sources can come from observational platforms (e.g. oceanographical buoy, coastal stations, weather stations, autonomous underwater vehicles, drifter buoys, ...) and in later versions from forecasting models, images and more.

[Terms of service](#)

[Contact the developer](#)

[Apache 2.0](#)

Se
org:
crit:
Ad:
est:

Authorize

data-products

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GET `/data-products/{id}/` Retrieves a specific product given by its id.

GET `/data-products/{id}/metadata` Retrieves metadata of a specific product given by its id. Currently only data products with a DOI: JSON-LD following DataCite schema.

platforms

GET `/platforms/` This endpoint allows listing all platforms with indexed datasets. Optionally can be filtered by platform type.

GET `/platforms/{id}/` Retrieves a specific platform given by its id.

instruments

Catalog http
The SOCIB Threat
The product data
friendly interface
Dataset
SOCIB DATA
observat
moor1
delft
moor/
hfr_12
penna
agener
operatio
ocean
hpr

El proceso de certificación CoreTrustSeal

¿Qué falta por hacer?

- Mejorar la descripción de los flujos de trabajo
- Mejorar el Plan de Preservación: ie. OAIS
- Mejorar el Plan de Continuidad de Acceso
- Actualizar política de datos (M2M)
- Completar la asignación de DOIs.

Siguientes pasos

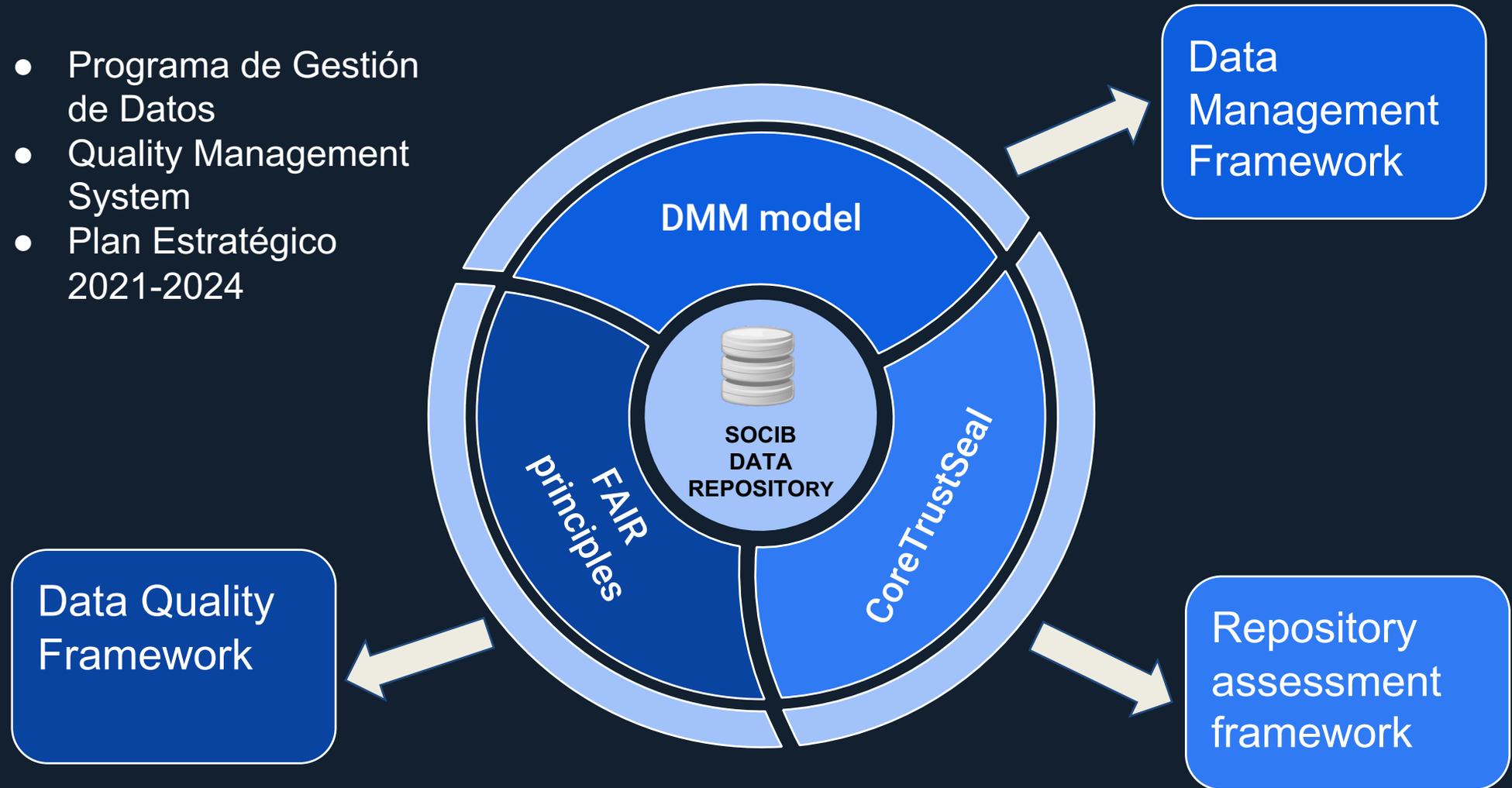
Dentro de SOCIB: marco de mejora continua



Siguientes pasos

Dentro de SOCIB: alineamiento

- Programa de Gestión de Datos
- Quality Management System
- Plan Estratégico 2021-2024



Expectativas

- Obtener la certificación
- Impacto nacional
 - Alineamiento con DIGITAL.CSIC: ya tiene la certificación CoreTrustSeal
 - Ser un repositorio de referencia para datos marinos a nivel nacional.
- Impacto internacional
 - Mejorar Interoperabilidad
 - Unidad Acreditada de Datos de la IODE
 - Miembro regular del World Data System
 - Best Practices: contribuciones relativas a Gestión de Datos.

¡Muchas gracias!

¿Preguntas?

Investigamos el mar, compartimos futuro



www.socib.es



@socib_icts



@ICTSSOCIB



ICTS SOCIB