



National Space Policy Monitoring Report

2019–2020



The Malta Council for
Science & Technology



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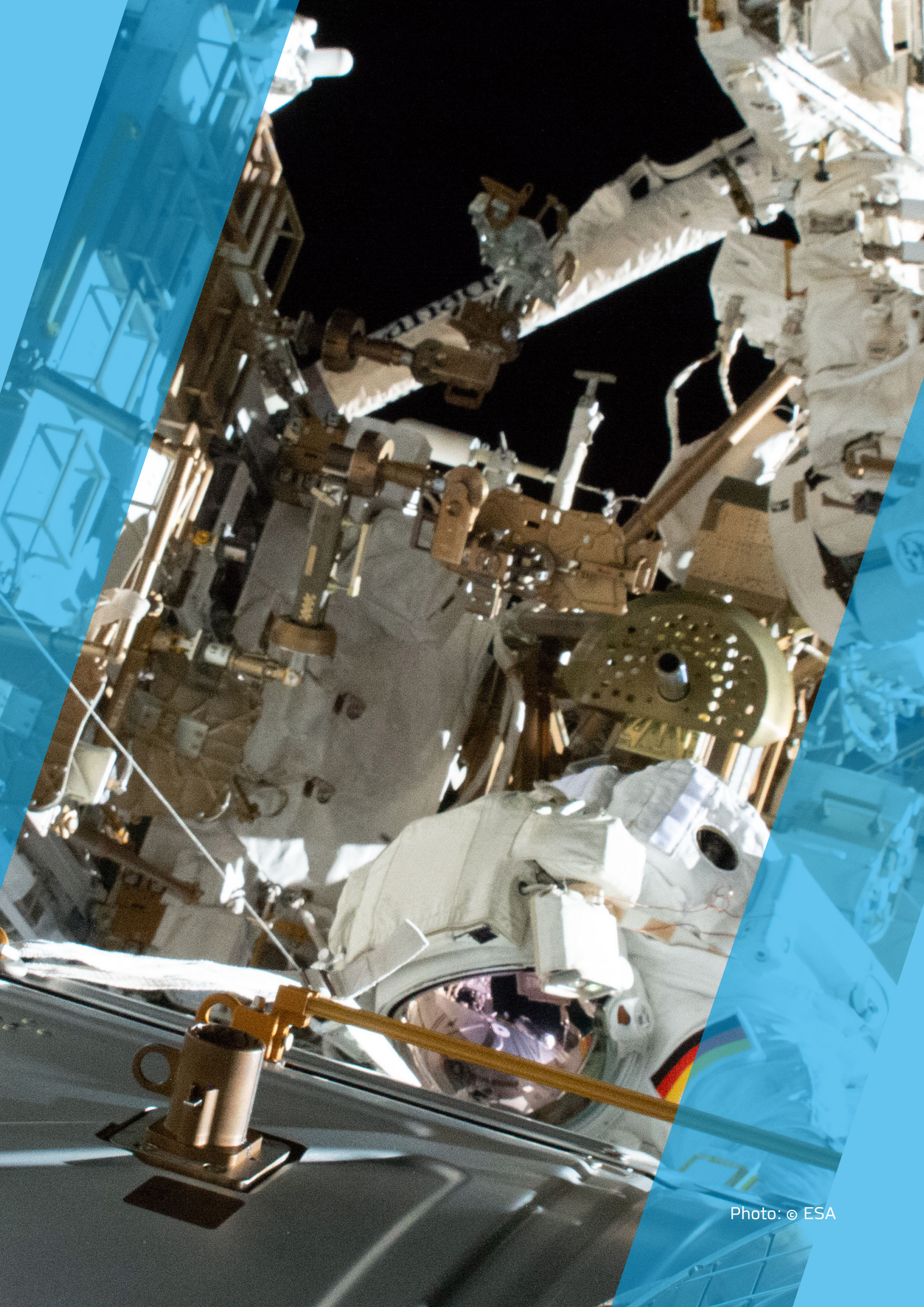


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Introduction

In 2017 Malta launched its first National Space Policy which highlighted the local potential and opportunities for space-related research and innovation. The policy identified four priority areas (termed ‘dimensions’) for investment to increase Malta’s space-related R&I capacity. These four dimensions are: **Essential Services, Economic, Educational Investments, and Extended Opportunities**. These dimensions outline the importance of space-related technologies in different aspects of our everyday life, and the economic potential of building Malta’s space-related R&I capacity.

The first National Space Policy Monitoring Report covered the period 2017-2018. It commenced the complex process of monitoring developments in space research and innovation in Malta by evaluating the implementation of the 2017 Policy through a set of identified indicators which correspond to the policy dimensions.

This report is the second monitoring report on the National Space Policy 2017. It covers the implementation of the 2017 Space Policy until 2020. It provides a continuation of the previous report and closes off reporting under the National Space Policy 2017. As from 2022, the National Space Strategy replaces the 2017 Space Policy.



Cygnus_cargo_spacecraft
Photo: © ESA

List of Acronyms

ASI	Italian Space Agency
CNES	National Centre for Space Studies / French Space Agency
EO	Earth Observation
ESA	European Space Agency
GIS	Geographic Information System
LoC	Library of Congress
MCST	Malta Council for Science and Technology
OAR	Open Access Repository
STEM	Science, Technology, Engineering & Mathematics



ESA Satellite
Photo: © ESA

Methodology

The methodology used in this report follows the same approach as that used in the 2018 report. Data collection was undertaken in the second half of 2021 and involved the previously identified stakeholders during the preparation of the 2018 report. Data covering 2019 and 2020 was collected. The monitoring framework utilised is summarised in the table below:

2017 Space Policy Dimension	Identified indicators	Relevant definitions	Data source/s
Educational Investments	A1: Number of participants in space-related student educational activities	Participants in workshops, competitions and similar initiatives targeted at primary and secondary level students in the context of the schools' syllabi/ curriculum	Esplora Interactive Science Centre MCST Space Education Programme
	A2: Number of Planetarium visits	Number of visits by the general public including repeat visits	Esplora Interactive Science Centre
	A3: Participation in space-related events	Number of participants at events organised for the general public	Esplora Interactive Science Centre

Extended
Opportunities

B1: Number of participants in space-related training	Training for individuals working in STEM-related careers to further their knowledge of and engagement with space-related research and innovation	MCST
B2: Number of formalised commitments for international collaboration regarding space-related activities	Formalised commitments include Memoranda of Understanding, Implementation Agreements, Framework Agreements and Memberships with international space agencies and organisations (such as ASI, CNES, ESA, EURISY etc); extensions to existing commitments are also included	MCST

Economic Dimension	C1: Number of Maltese applications for EU funds in space	Number of applications involving at least one Malta-based researcher for Horizon 2020 space-related funds	Cordis Database
	C2: Number of applications for Space Research Fund	Number of applications submitted annually for funding under the Space Research Fund managed by MCST	MCST
	C3: Funds awarded further to formalised commitments for international collaboration regarding space-related activities	Amount of funding awarded on an annual basis to space-related research projects stemming from the formalised commitments/ agreements made	MCST
	C4: Public funds allocated for space-related R&D	Government Budgetary allocation addressing the socio-economic objective: Exploration and exploitation of space	NSO
	C5: Number of space-related publications	Number of publications per year related to space involving at least one Maltese-based researcher	OAR@UM Scopus Web of Science
Essential Services	D1: Number of applications of downstream space-related technologies	Number of new applications per year of space-related technologies by departments and entities within the Government sector	All ministries
	D2: Number of registered users on Copernicus	Number of local registered users with Copernicus	Copernicus Support Office



ISS Space Station
Photo: © ESA

Data & Results

A. Educational Investments

This dimension emphasised the importance of enhancing public perception and awareness of space and the space sector while also raising awareness about potential opportunities for academic endeavours and applied research in the local sector.

Indicator A1: Number of participants in space-related student educational activities

Scholastic year	Number of Workshops	Number of Participants
2017/2018	4	1131
2018/2019	7	1098 ¹
2019/2020	3	62 ²

Due to the Covid-19 pandemic, space related activities and workshops in 2020 were cancelled due to the public health regulations regarding public events. Therefore, data for the 2019/2020 scholastic year only includes data for 2019.

Indicator A2: Number of Planetarium visits

	2017	2018	2019	2020
Number of visitors	Not available	Not available	12,252	5,263

In 2020, Esplora was closed to the public from April to June due to the Covid-19 pandemic which had an impact on the number of Planetarium visits.

¹ The available data for the total number of participants for one of the workshop held during the scholastic year 2018/2019 was listed as '20 to 30 attendees' and an average was used for the purpose of adding all participants to all events.

² Data on number of participants for one of the teams was not collected.

Indicator A3: Participation in Space-Related Events

	2017	2018	2019	2020
Number of participants	935	1489	634	0

Due to the Covid-19 pandemic, space related events in 2020 were cancelled due to the public health regulations regarding public events.

B. Extended Opportunities

This dimension encourages public-private-academia collaboration on space-related research and extend the benefits of space-related technologies and activities for the local economy.

Indicator B1: Number of participants in space-related training

	2017	2018	2019	2020
Number of participants	Not available	Not available	25	1

Due to fluctuating Covid-19 travel restrictions, the process of sending trainees to participate in programmes abroad in 2020 was difficult; only one person participated in space-related training in 2020.

Indicator B2: Number of Formalised Commitments for international collaboration regarding space-related activities

	2017	2018	2019	2020
Number of Commitments	3	1	1	0

These formalised commitments are listed below:

- Agreement between the European Space Agency and the Republic of Malta Concerning Space Cooperation for Peaceful Purposes (2012-2022) [signed in February 2012 and extended in January 2017]

- Declaration of Intent between the Malta Council for Science and Technology and the Italian space agency (ASI) on cooperation in the field of space activities for peaceful purposes [signed in June 2017]
- Framework Agreement between the Malta Council for Science and Technology and the Centre National d'Etudes Spatiales (CNES) concentrating on the promotion of cooperative activities in space [signed in October 2017]
- Implementation arrangement between the European Space Agency and the Republic of Malta regarding technical assistance and expertise (2018-2023) [signed in March 2018]
- Agreement between the European Space Agency (ESA) and the Malta Council for Science and Technology (MCST) for the on-the-job training of Maltese graduates on space matters [signed in June 2019]

Due to the work that was being carried out in the drafting of the post-2020 National Space Strategy, no new formalised commitments were entered into in 2020.

C. Economic Dimension

This dimension of the National Space Policy focuses on the potential of utilising downstream space-related technologies to incentivise the growth of the local high-tech industry.

Indicator C1: Number of Maltese Applications for EU funds on space

In 2020 five space-related proposals were submitted for Horizon 2020 funding; with two of the submitted proposals awarded funding in relation to Space. While no generalisations can be made, this data shows an improvement in comparison with previous years since 5 proposals were submitted between 2017 and 2019 but none were successful.

Indicator C2: Number of applications for the Space Research Fund

	2018	2019	2020
Applications	9	7	4
Beneficiaries	2	3	2

The dataset for this indicator is too small to draw any meaningful conclusions; however it can be noted that there has been consistent take-up of funds over this 3 year period.

Indicator C3: Funds awarded further to formalised commitments for international collaboration regarding space-related activities

- *SRF Projects stemming from implementation arrangement between the ESA and the Republic of Malta regarding technical assistance and expertise. Funds for the SRF were first awarded in 2018 and the funds captured below are tranches awarded per year.*

	2017	2018	2019	2020
Funds awarded	Not applicable	€202,194.47	€ 297,696.73	€0

- *MCST-CNESSpaceBilateralFundstemmingfromFrameworkAgreementbetweentheMaltaCouncil for Science and Technology and the Centre National d'Etudes Spatiales (CNES) concentrating on the promotion of cooperative activities in space. First award of funds took place in 2019.*

	2017	2018	2019	2020
Funds awarded	Not applicable	Not applicable	€79,980	€0

As previously mentioned in *Indicator B2*, no formalised commitments were planned or finalised in 2020 due to the drafting of the post-2020 National Space Strategy.

Indicator C4: Public Funds allocated for space-related R&D

	2017	2018	2019	2020
Exploration and exploitation of space (GBARD)	nil	€ 308,000	€ 480,000	€315,000

Indicator C5: Number of space-related publications

	2017	2018	2019	2020
Publications on OAR@UM	5	10	3	14
Publications on Web of Science & Scopus ³	84	121	116	86
Total:	81	124	115	100

An increase in the number of space-related publications was noted from 2017 to 2018, however a decrease has been observed from 2018 to 2020.

D. Essential Services

This dimension highlights the importance of utilising downstream space-related technologies to cover essential services including marine, maritime, migration, and agriculture among others, however more awareness is needed on the potential of satellite applications.

D1: Number of applications of downstream space-related technologies

In 2019 there were three applications of downstream space-related technology carried out by one Ministry, and in 2020 the same Ministry continued following discussions at EU level on security-related applications and services. This ministry is currently in discussion with its various public stakeholders to examine the most sensible use, if any, of such flagship programmes.

In 2020, another governmental entity purchased a Geographic Information System (GIS) and is planning to launch a new website, which will allow the general public access to this data.

³ Duplicate publications were removed

D2: Number of registered users on Copernicus

D2.1 Number of User Registrations⁴ from Maltese entities:

	2018	2019
Copernicus Services	3	0

The Copernicus Support Office was contacted to provide data on user registrations for 2020, however no data was provided.

The Copernicus Services address five thematic areas⁵ and supports a number of Earth Observation (EO) data applications.

D2.2. Number of Sentinel Open Access Data Hub⁶ Registrations from local individuals:

There were 177 sentinel open access data hub registrations from Maltese individuals between 2014/2015⁷ and April 2020. The Copernicus Support Office was contacted for a data updated however no data was provided.

4 Public Authority User or Public Users Public Authority Users include:

- Any government or other public administration of States participating in the Copernicus Programme including public advisory bodies, at national, regional or local level
- Any natural or legal person performing public administrative functions under national law, including specific duties, activities or services in relation to an EU policy
- Any natural or legal person having public responsibilities or functions, or providing public services relating to an EU policy under the control of a body or person falling within (1) or (2), such as a contractor of a public authority
- Any research and academic organisation
- Contractors of such entities

Any natural or legal person is registered in the Public User category.

5 Thematic areas include: Land, Marine, Emergency, Security and Atmosphere (<https://spacedata.copernicus.eu/web/cscda/copernicus-users/user-categories/copernicus-services>)

6 The Open Access Hub provides complete, free and open access to Sentinel-1, Sentinel-2, Sentinel-3 and Sentinel-5P. Other Hubs provide restricted access to certain Sentinels data such as the Copernicus Services Data Hub.

7 Copernicus Portals were launched during this time



Prichal module over Egypt Red Sea
Photo: © ESA



Satellites in orbit
Photo: © ESA

Conclusion

Whilst providing a basic foundation for monitoring of space activities in Malta, the short time span of the 2017 Space Policy's monitoring framework makes it difficult to draw meaningful conclusions and identify trends. Thus, no substantial policy recommendations can be made. However, a number of procedural recommendations in the 2018 report remain valid and will be addressed as part of the monitoring framework of the 2021-2027 Space Strategy, which will be the successor of the 2017 National Space Policy.

Moreover, the monitoring timeframe of this report takes into account space-related initiatives and activities which took place in 2020, therefore the data is heavily affected by the Covid-19 pandemic. One of the dimensions which focuses on Educational Investments was most affected since the data is extracted from public engagement and hands-on educational activities. These activities and events were cancelled due to Public Health regulations issued during the pandemic.

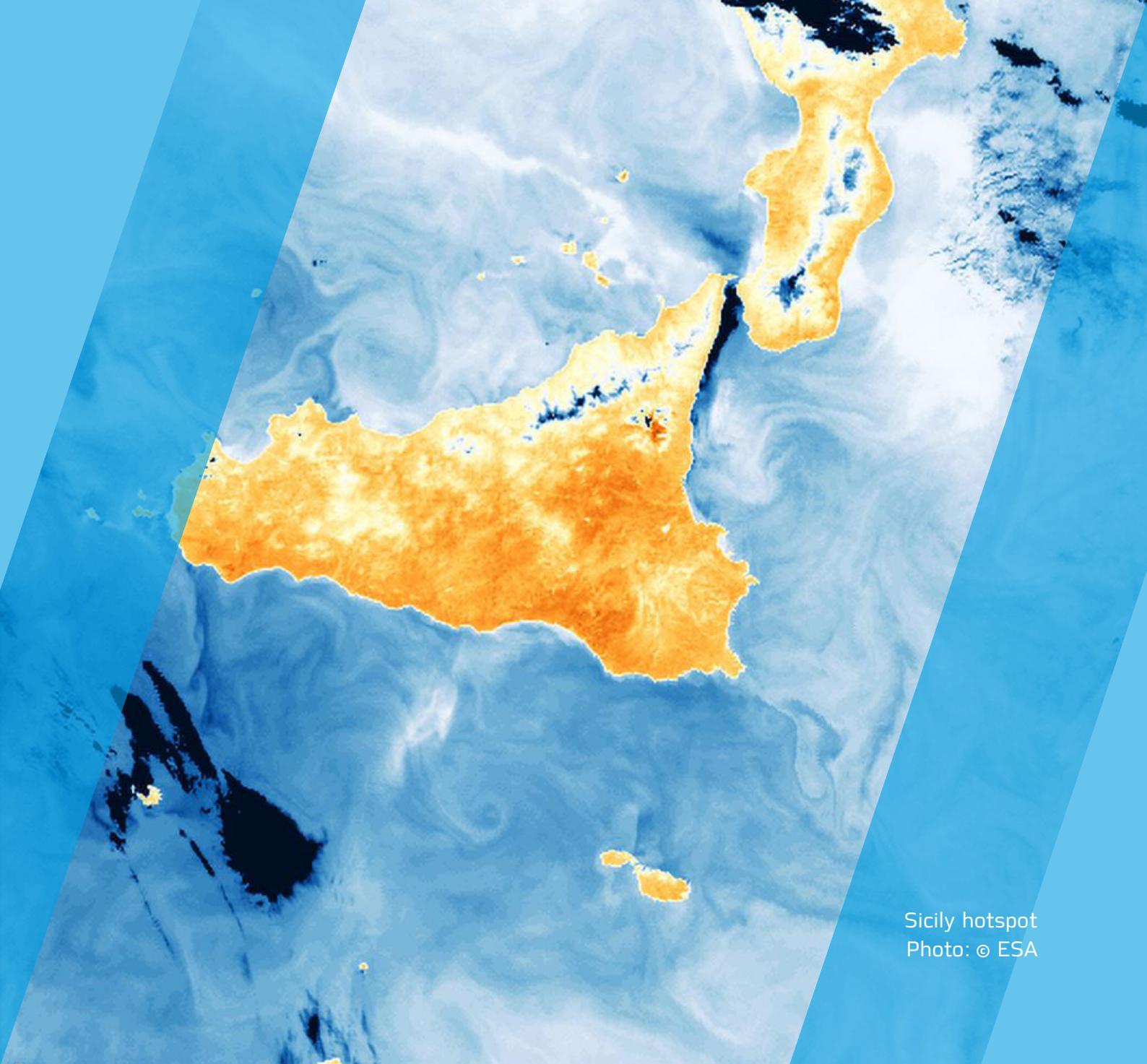
As the monitoring period covered by the 2017 National Space Policy comes to an end, preparations are in full swing for the finalization of the post-2020 National Space Strategy, covering 2021-2027. Indeed, the draft of the post-2020 National Space Strategy was published in the first quarter of 2022. The strategy was developed in the context of the 2017 National Space Policy and will provide a roadmap to continue supporting Malta's growing space economy over the coming years.



Annex 1

List of Keywords used for Indicator C5 Number of space-related publications:

- Space
- Space research
- Telescope(s)
- Satellite(s)
- Satellite data
- Space telescopes
- Universe
- Space sciences
- Earth (Planet)
- Remote sensing
- Global Positioning System (GPS)
- Orbit(s)
- Solar system(s)



Sicily hotspot
Photo: © ESA



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