



The Malta Council for
Science & Technology

2018

ANNUAL REPORT
and Financial
Statements



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Foreword

BY The Hon. Silvio Schembri
**Parliamentary Secretary for Financial Services,
Digital Economy & Innovation**

Research and Innovation plays a significant role in triggering social and economic challenges. Through new knowledge and research, we may create innovative products, processes and services which enable better competitiveness, productivity and prosperity. Research and Innovation are the central pivots of our drive to become a knowledge-based economy and society. Malta's innovation capability is crucial to realise our vision to become leaders and continue to compete with dynamic economies. This is the reason the government has prioritised innovation and will continue to support and invest in the sector. Malta's economic growth surely encouraged an increase in the exploration of new opportunities within the R&I scenario. In fact, 2018 was a year of positive progress for the Malta Council for Science and Technology (MCST).

In 2018, the government launched its participation in the PRIMA (Partnership for Research and Innovation in the Mediterranean Area) programme for which a €5 million fund will be contributed over a ten-year period – in fact this is the highest per capita investment made amongst all participating countries. Local researchers will be allocated €500,000 per annum to assist R&I actions dealing with the thematic areas of sustainable water management, sustainable and effective farming systems and agro-food value chains in the Mediterranean. Another funding programme was launched in 2018 – a €2 million National Space Fund run over a 5-year period – exclusively to Maltese researchers working within the space sector. The government believes that research in space technology opens many doors in the commercial sector which Malta will exploit in the coming years. Besides these two milestones, the government has further supported researchers with an increased budget for the FUSION programme – a €2.2 million fund was allocated in 2018.

Research and innovation also affects our daily lives and through Esplora, Malta's Interactive Science Centre, MCST does a good job in nurturing creativity and scientific curiosity in our students and in bringing science, research and innovation closer to people – particularly the younger generation. Education is key to our future and will ensure that Malta's reputation is maintained for generations to come. I would like to congratulate Esplora for being selected as an emblematic project by the European Commission in April 2018.

During year 2018, MCST has done sterling work in assisting the government in its vision for areas covered by its remit. Additionally, the future looks promising with other projects lined up in the pipeline. I would like to personally thank the Executive Chairman of MCST, Dr Jeffrey Pullicino Orlando and all the staff for their hard work and dedication. We look forward to build further on the foundations laid and explore new opportunities for the benefit of the Maltese society.

The background is a vibrant blue gradient. It features several thin, white, curved lines that sweep across the frame, creating a sense of motion and modernity. Scattered throughout the blue area are numerous small, out-of-focus white circles, resembling bokeh or digital particles. The overall aesthetic is clean, high-tech, and professional.

MESSAGE

by The Executive
Chairman





Message

BY Dr Jeffrey Pullicino Orlando
Executive Chairman

2018 was yet another successful year for the Malta Council for Science and Technology (MCST). Thanks to our dedicated team, that I feel privileged to work with, the entity continued to get excellent results in the areas within our wide-ranging remit. The year saw us engaged in the implementation of a number of new initiatives in our continued efforts to put Science and Technology at the forefront of our national agenda. This annual report will give the reader an insight into all the tasks we are focussing on and will highlight the key achievements and progress made.

We are very proud to see that all the years of dedication and hard work that went into making Esplora one of the foremost Interactive Science Centres in Europe is being acknowledged. The European Commission selected our Centre as one of the emblematic projects for the 30th anniversary of Cohesion Policy. This success resulted in Esplora featuring prominently in an exhibition organised by the Commission in Brussels and in a number of other member states.

Esplora opened its doors to the public towards the end of 2016 and has since hosted a multitude of visitors of all ages. The rehabilitation of the historic buildings now occupied by our exhibits saw us spending around €26 million; €17 million of which came from the European Regional Development Fund (ERDF). In 2018, we had over 100,000 visitors and our goal is to surpass this figure next year whilst ensuring that we maintain the excellent standards we have become renowned for.

We are proud to have an excellent relationship with the major local stakeholders working in the field of STEAM (Science, Technology, Engineering, Arts and Mathematics). Through the support of the Ministry for Education and Employment we have extended and complimented the use of the EU funded tablets

given to students through the One Tablet Per Child initiative by organising a digital science quest at Esplora. As from 2018, Year 4 to Year 6 students started using their tablets at our Centre during school or family visits to go through a selection of our exhibits whilst “exploring, thinking and imagining” – the essence of the Esplora experience. Science literacy has become one of our main aims, facilitated through a number of exciting initiatives. We are also pleased to have signed a Memorandum of Understanding with the Institute for Education which is seeing us collaborate on staff training for Esplora employees.

In our constant efforts to ensure that we attain the maximum potential out of Esplora and to ensure that it continues to develop into the leading Science Centre in Europe, we engaged in a reflective exercise with our external consultants –KCA. Using their internationally acknowledged expertise and experience in the field, they have provided us with constructive feedback from an operational perspective along with a number of suggestions for the future.

KCA were also engaged in assisting us in the extensive preparatory work that is going into the development of EsploraNatura. This will see us relocating the fascinating collection presently housed at the Natural History Museum in Vilhena Palace – which is dire need of restoration – to the buildings on the eastern side of the Bigħi complex, next door to Esplora. Following on the success of Esplora, MCST will be developing another world class visitor attraction which will be focusing on the presentation and interpretation of our fascinating local natural history.

2018 was also a year which saw our Technical units attain a number of extremely positive results. Their work, reinforced by the support of Honourable

Silvio Schembri and his team, and the relevant local authorities has widened the scope for Malta's participation in a myriad of research and innovation (R&I) initiatives. MCST is now administering a significantly increased budget for FUSION – the national funding programme in R&I – amounting to a €2.2 million fund in 2018. This has obviously allowed us to increase the number of projects funded.

Work on a post-2020 R&I strategy was initiated in 2018. We are pleased that the EU's Horizon 2020 Policy Support Facility has provided us with their assistance in the form of a Peer Review of Malta's R&I system. The Peer Review Panel will provide recommendations on Malta's efforts in the field, support capacity building and help us improve the dynamics that spur us ahead. Following the successful launch of the National Space Policy in 2017, the year also saw us embarking on the preparatory work necessary for the next policy. 2018 also saw the commencement of negotiations on the new EU framework programme post 2020, called Horizon Europe. MCST provided all the necessary support to ensure that Malta's concerns and specificities are taken into consideration in the legal text, thus lowering the barriers to entry into this programme for Maltese researchers.

The Council continued working hard on capacity building activities within the local space sector and strengthened its relationship with renowned entities within the sector, notably with the French Space Agency (CNES) and the Italian Space Agency (ASI). Most notably, in 2018 MCST intensified its collaboration with the European Space Agency (ESA). The Council launched a National Space Fund of €2 million exclusive to the Maltese space sector. The prime objective of this fund, which will operate between 2018 and 2022, is to tangibly aid capacity-building in line with Malta's current and immediate priorities. This national initiative, supported by ESA through an Implementation Agreement signed in 2018, is indeed a milestone within the Maltese Space Sector. The National Space Fund is composed of the Space Research Fund providing financial support for research, development and innovation in the downstream Satellite Earth Observation (EO) sector, specifically projects that deal with the processing and exploitation of data collected through EO satellites. Beyond that, in order to raise awareness on space applications and the related opportunities, MCST is supported by ESA in the roll-out of a Space Education Programme for Maltese students.

In a world characterised by globalisation and radical progress in science and technology one needs to look beyond our horizons for new prospects. The Council has established a close collaboration with the Ministry of Science and Technology in China. A national budget of €350,000 for the eventual funding of one or more projects in the areas of Maritime Services, Maritime Technology, Aquaculture, and Transport was confirmed by each party.

As a result of ongoing efforts in internationalisation, MCST is also successfully engaged in the MarTERA, Blue Bioeconomy ERA-NET Co-fund, and the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) programmes. The latter, launched in 2018 during our Presidency, is supported by the European Funding Programme Horizon 2020. It amounts to a €220 million fund running over a span of ten years. Malta will be contributing €5 million over the ten-year period, allocating €500,000 per annum to fund research and innovation actions dealing with the thematic areas of sustainable water management, sustainable and effective farming systems and agro-food value chains in the Mediterranean.

Throughout the year, MCST also continued supporting potential applicants to participate in Horizon 2020 – the EU's Framework Programme for Research and Innovation. In 2018, 20 new Grant Agreements were signed by 23 Maltese organisations amounting to €4.2 million. Other encouraging figures are associated with the European Cooperation in Science and Technology (COST) – a framework that supports the creation of interdisciplinary research networks across Europe. In 2018, researchers based in Malta joined 60 new COST actions and more than 173 researchers based in Malta benefited from COST participation in various areas. A total of 34 COST-related meetings were organised on our Island. Of particular note was Malta's success in coordinating its first COST action: European network for advancing electromagnetic hyperthermic medical technologies, MyWAVE.

We look forward with confidence and the motivation to succeed further. The management team is already working on a number of new initiatives and projects that will surely present us with new opportunities.

The EsploraNatura project remains a priority. Further to this, the foreshore around the Bighi peninsula will also be rehabilitated and visitors to Esplora will be able to access the science centre through the historic cot lift.

I am proud to say that this year has been characterised by notable organisational growth and the significant expansion of our network with local and international partners. Our achievements are a testament to the team's collective effort, our stakeholders enthusiastic involvement, and the constant support received from the Parliamentary Secretariat for Financial Services, Digital Economy and Innovation and the Office of the Prime Minister.

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POLICY, STRATEGY

and Internationalisation Unit



Policy, Strategy and Internationalisation Unit

The main function of the Policy, Strategy and Internationalisation (PSI) Unit is to provide advice to Government on matters relating to research, innovation and space, and to deepen the international collaboration amongst local and foreign researchers. The team is responsible for championing the implementation of the National R&I Strategy 2020, and ensuring that the principles of the Strategy are mirrored in other national policies and strategies, thereby facilitating a coordinated approach to policy making across Government. In championing the Strategy's implementation, the team acts as a catalyst in bringing together key entities working on related issues to ensure open dialogue, information exchange and promote cooperation. The team members represent Government in numerous EU-level fora and provide support and expertise to the process of developing a national position on research, innovation, space and related initiatives. In 2018, the Unit embarked on strengthening its internationalisation remit by increasing its resources and engaging in a number of new internationalisation initiatives in which the Maltese research community may participate in.

The National Research and Innovation Strategy

The current Research and Innovation Strategy was launched in early 2014 and covers a seven year period until 2020. Its implementation is being undertaken through a rolling R&I Action Plan, which the Unit finalised in 2016 with the support of relevant stakeholders. The Action Plan identified specific measures to address the action lines in each of the three pillars of the R&I Strategy. The aim of the Action Plan is to ensure concerted



implementation of measures along the principles and priorities enshrined in the national R&I Strategy 2020, reduce the fragmentation in R&I and foster synergies and complementarities.

In 2018 MCST met with all stakeholders for two main reasons: to update the measures in the rolling R&I Action Plan; and to discuss the monitoring of each individual measure as part of the national R&I monitoring system which was set up over the period 2017-2018 further to the engagement of experts through the Horizon 2020 Policy Support Facility. By the end of 2018, the data for the indicators at pillar level, objective level, action level and measure level were compiled and a data analysis process was undertaken. The first National Monitoring Annual report is set to be published in 2019.

Work also started towards a post-2020 R&I Strategy in November. A kick-off of a revamped Entrepreneurial Discovery Process was held

in November to evaluate the current smart specialisation areas and discuss their validity in today's economy. Moreover, the future challenges of Malta and new possible sectors that have R&I potential and that could help address some of our country's challenges were also discussed. Another important input into the new national R&I Strategy post 2020 will be the results of the Peer Review of Malta's R&I system, supported by the EU's Horizon 2020 Policy Support Facility. The main aim of the Peer Review is to provide recommendations on Malta's efforts to support R&I capacity building and improve the dynamics as well as the efficiency of the R&I system and the current public investments in R&I. The Peer Review kicked off in July 2018. The panel of experts visited Malta in October and held several meetings with key stakeholders. A second visit is scheduled for January 2019 and the final report will be disseminated in June 2019. The results of the exercise will be a set of recommendations that will feed into the development of the new R&I strategy post-2020.

National Space Policy

Following the successful launch of the National Space Policy in 2017, in 2018 MCST commenced with the planning and preparatory work for the next policy. Members of the team participated in several events where information on the national space policy was disseminated to the general public and work on a monitoring system for the current National Space Policy was also initiated. Throughout the year, MCST continued to provide advice on the discussions held on the new EU space package at the Council of the European Union (Space Working Party).

Policy Advice

During 2018, input and advice on the development of the 2018 National Reform Programme for the achievement of the EU2020 objectives was provided, together with regular updates on the

implementation of measures listed. Following the development of the European Research Area (ERA) Roadmap at EU level in 2015 and the ensuing preparation of the national ERA Roadmap for Malta in 2016, during 2018 the Unit was responsible for reporting on its implementation through the European Research and Innovation Area Committee (ERAC). Malta was represented in various international fora related to the ERA, such as the European Research Area and Innovation Committee (ERAC), the High Level Group on Joint Programming (GPC), the Strategic Forum on International Cooperation (SFIC), and the Standing Working Group on Gender in Research and Innovation (SWG GRI). In this context, it also followed important developments with regards to open access and open science. Biannual meetings were regularly held with Malta's delegates to the ERA-related groups.

The team members continued to follow closely and provide intructions to all the ongoing negotiations in the Research Working Group (RWG), the Joint Research/Atomic Questions Working Party and the Space Working Party. In the RWG, 2018 was mainly characterised by the negotiations on the proposed new Framework Programme for research and innovation 2021-2027. The proposal, titled 'Horizon Europe', aims to boost the Union's productivity and competitiveness, is crucial for sustaining the EU's socio-economic model and values, and enables solutions to societal challenges in a systemic way.

The Maltese government was continuously assisted and advised by MCST on Horizon Europe throughout the EU Council's negotiation process. Technical level expertise in the research working party and at the political level in both the meetings of EU permanent representatives (COREPER) and the Competitiveness Council meetings of research ministers (COMPET) was provided.

In 2018, MCST similarly followed and provided expertise in the relevant EU and international fora on the development of the European Open Science



Cloud (EOSC) and its Governing Board. MCST also equally followed and advised the government in the formation of the EuroHPC (High Performance Computing) Joint Undertaking. Although Malta is not a participating state in this Joint Undertaking, it occupies the status of an observer and is able to participate via the contribution provided by Horizon 2020.

Other dossiers on which input was provided include the interim Evaluation of H2020, the new mandate and financial package for the ITER programme post-2020, and the commencement of the negotiations. The team members have also closely monitored the discussions on ITER through MCST's representation on the F4E Governing Board and the Industrial Liaison Officers (ILO) Group.

In seeking to contribute to ensuring a synergistic approach in the development of related national strategies and policies, the Unit is responsible for coordinating MCST's input to those areas led by other ministries and entities that overlap with MCST's remit.

Analysis and Monitoring

Based on the official statistics available, the team continued to monitor the performance and trends of national R&I-related data.

Throughout 2018, discussions were undertaken with NSO on more efficient data collection and also with other Governmental entities on possible ways to increase their R&D budget. Malta's national R&D expenditure target for 2020 is 2% of GDP.

Internationalisation

5.1 Partnership for Research and Innovation in the Mediterranean Area (PRIMA)

PRIMA operates under the framework of an Article 185 of Treaty on the Functioning of the European Union (TFEU). Together with the European Commission, its partners consists of members from the European Union's Member States, Horizon 2020 Associated Countries and Mediterranean Partner Countries, and is administered on basis of co-ownership, co-management and co-funding.. This is the first time that Malta is participating in an Article 185 initiative, with the negotiations on PRIMA having taken place during the Maltese Presidency of the Council of the EU in 2017.

By funding R&I through competitive calls, the main objective of the ten-year initiative which is partly funded by the EU's research and innovation programme (Horizon 2020), is to devise new R&I approaches to improve water availability and sustainable agriculture production. The first calls under PRIMA were launched in 2018, with an official high-level launch event organised

at MCST. The aim of the event was to provide information on and disseminate calls amongst the local stakeholder community.

Malta participated in a PRIMA nationally funded call with a budget of €500,000. Two local partners were successfully selected for funding, following an independent evaluation, to participate in two different PRIMA projects and will receive a total of €262,500. Grant Agreement negotiations with the Council will take place in the first quarter of 2019, with the projects expected to start in the second quarter of 2019.

Furthermore, in December 2018, the second PRIMA calls were opened and MCST again participated with a budget of EUR 500,000. Results of these calls are expected in the fall of 2019.

5.2 Joint Programming Initiative on Healthy and Productive Seas and Oceans

The aim of Joint Programming Initiatives (JPIs) is to coordinate research and programming in specific thematic areas across EU countries. The JPI on Healthy and Productive Seas and Oceans (JPI Oceans) focuses on enabling the advent of knowledge based maritime economy, ensuring good environmental status of the seas, optimising the response to climate change and mitigating human impacts on the marine environment.

In order to be able to deliver on its strategic mission and enter into new partnerships, JPI Oceans established itself as an international non-profit association under Belgian law (association internationale sans but lucratif – AISBL) in 2018. Malta was the first country after the founding countries to become a member of JPI's legal arm. Through the PSI Unit, MCST actively participates in this JPI, including at Management Board level. MCST's participation is expected to result in opportunities for local researchers to participate in joint calls for proposals. In fact, as a result of Malta's participation in JPI Oceans, in 2018, MCST actively engaged in the second MarTERA Call, the second joint call for proposals on microplastics in the marine environment and the first call for the recently launched Blue Bioeconomy ERA-NET Co-fund, with a total budget of €300,000. The results of these calls will be available in the last quarter of 2019. MarTERA is an ERA-NET Co-fund initiated by JPI Oceans with the overall aim of strengthening the ERA in maritime and marine technologies as well as Blue Growth. This transnational initiative is being supported by national and regional funding ministries and organisations. The first call was launched in 2017, through support from Horizon 2020, with collaborative research and innovation projects falling within one of the following priority areas: environmentally friendly maritime technologies; development of novel materials and structures; sensors, automation, monitoring

and observations; advanced manufacturing and production; safety and security.

MCST participated in the first call of MarTERA with a committed budget of €50,000. One local private entity was successful in being selected for funding and together with the contribution provided by the European Commission, will be receiving a total of €74,000 over the three-year period of the project. The project focuses on innovative corrosion sensing in aquatic structures and is expected to finish by the first quarter of 2021.

Furthermore, the second MARTERA Call was opened at the end of 2018 with the results expected in the fall of 2019.

5.3 ERANETMED: Euro-Mediterranean Cooperative through ERA-NET Joint Activities and beyond

The aim of ERANETMED is to enhance Euro-Mediterranean co-ownership through innovation and competitive research in the societal challenges faced by the region. ERANETMED seeks to reduce the fragmentation of programming by increasing coordination among national research programmes of European Member States, Associated Countries and Mediterranean Partner Countries.

ERANETMED is also seen as a prelude to a longer and more stable cooperation among Mediterranean partners. A perfect example to showcase this was the initiation of PRIMA, where the idea was conceptualised using such networks.

Although this initiative came to an end in March 2018, the projects funded and developed are still ongoing. In fact, three local partners are currently participating in two ERANETMED projects focusing on the integration and management of energy and water systems, as well as the development of a smart micro grid. A total of €300,000 was requested for the duration of the projects and they are expected to be finalised by 2021.

5.4 ARIMNet2: Coordination of Agricultural Research in the Mediterranean Area

The ARIMNet2 ERA-NET operated between 2014 and 2017. Nevertheless, the funded projects were still ongoing in 2018. ARIMNet2 was a network of funding organisations and national research institutions that promoted the coordination of national research activities and identified joint research programmes to alleviate fragmentation and exploit synergies in the field of agricultural science. MCST actively participated in the second Call launched by ARIMNet2 with a committed budget of €39,000. One local partner was successful in being selected for funding and is currently participating in a transnational project entitled 'Land system dynamics in the Mediterranean basin across scales

as relevant indicator for species diversity and local food systems'. This project is expected to be finalised by the second quarter of 2020.

5.5 Third-Country Researchers

In 2018, MCST collaborated with Identity Malta and the Ministry for Home Affairs and National Security (MHAS) on the implementation of EU Directive 2016/801/EU of 11th May 2016 on the conditions of entry and residence of third-country nationals for the purposes of research, studies, training, voluntary service, pupil exchange schemes or educational projects.

The resulting Legal Notice 212 was published in July 2018. MCST was designated as the entity responsible for the approval of national Research Organisations.

5.6 PluMTri – Malta's Forum for Research and Innovation

PluMTri was set up in 2015 as an online portal for researchers seeking to connect with one another and to help find information on research funding opportunities and calls.

In May 2018, PluMTri was taken offline in order to undertake a major overhaul and build on the lessons learnt since its development.

Discussions are currently undergoing with various stakeholders to ensure that PluMTri becomes an effective one-stop shop for researchers and innovators.

Once back online in 2019, the portal will bring together various local public and private R&I stakeholders, offering information on related opportunities and grants.



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RESEARCH AND INNOVATION

Programmes Unit



Research And Innovation Programmes Unit

Internationalisation Partnership Award Scheme - 2018

Through the Internationalisation Partnership Award Scheme (IPAS), the Malta Council for Science and Technology (MCST) supports collaborative initiatives between local academic institutions or private entities and at least one foreign centre of academic excellence. During 2018 all 14 projects awarded in the previous year were successfully completed through submission of final financial and technical reports. IPAS 2018 attracted 20 applications, from which a total of 9 projects were awarded, requesting a total of €43,536 in funds. The 9 projects awarded, commenced their activities in the second part of 2018 and will finalise them by end of September 2019. The year 2019 will see some changes for this programme. MCST will introduce a new part which aims to provide opportunities for Maltese entities planning to submit a Horizon 2020 proposal as a coordinator. The entities will be able to engage a consultant (local or foreign) to support the submission stage of their Horizon 2020 proposal.

IPAS 2018 Funded Projects

Beneficiary / Project Number	Funds Requested
University of Malta IPAS-2018-006	€ 4,955
University of Malta IPAS-2018-002	€ 5,000
University of Malta IPAS-2018-003	€ 5,000
University of Malta IPAS-2018-008	€ 5,000
University of Malta IPAS-2018-015	€ 4,810
University of Malta IPAS-2018-004	€ 4,962
University of Malta IPAS-2018-011	€ 5,000
University of Malta IPAS-2018-010	€ 4,315
University of Malta IPAS-2018-007	€ 4,494



FUSION – The National R&I Programme - 2018

Commercialisation voucher Programme and Technology Development Programme

FUSION is a national funding programme that supports Research and Innovation as well as providing the necessary support for researchers and technologists to turn their innovative ideas into a market-ready reality. FUSION is supported through Malta Government funds and is managed by the Malta Council for Science and Technology (MCST).

FUSION is composed of two main programmes, the Commercialisation Voucher Programme (CVP) and the Technology Development Programme (TDP). These two programmes are designed in a way to offer the necessary mentoring and financial support for researchers and technologists to take their ideas to the market. The CVP is aimed at improving the development and commercialisation potential of innovative research ideas, whereas the TDP supports the actual development of innovative projects proposed by public entities and industry players.

Between 2016 and 2018, a total of 209 CVP applications were received. These proposals targeted eight Smart Specialisation areas: ICT, Health, Resource Efficient Buildings, High Value-Added Manufacturing, Aviation & Aerospace, Tourism Product Development, Maritime and Aquaculture. Following scientific evaluations by external independent experts, a total of 89 beneficiaries were selected for funding through two CVP Calls per year, requesting a total of almost €1.4M in funding. Table 1 portrays a breakdown of 2016-2018 project submissions and funded projects per smart specialisation area. A comprehensive list of the 2016-2018 funded CVP projects, indicating their progress and status is provided in Table 2. In 2019, two CVP Calls will be launched.

Following the successful completion of the projects under the Commercialisation Voucher Programme, 13 projects were awarded funding for the TDP during 2018. A total national funding of almost €2.58M were committed to these projects, some of which will run into 2021. A list of these projects is provided in the Table 7. Two TDP Calls will be issued in 2019.

The 2018 grants for CVP and TDP, were based on a total allocated MCST budget of €2.2M, an increase of 40% over the previous year. This budget of €2.2M will be maintained for 2019.

Between 2004 and 2018 inclusive, 108 proposals were accepted for funding, requesting a total commitment of approximately €16.16M.

A comprehensive list of these projects, indicating their progress and status in 2018, is provided in the subsequent pages through Tables 3 to 6. There were

no calls in 2005 and 2007 and there were no closed calls in 2014 due to the dependency of the CVP.

Projects that had been completed prior to 2018 have been removed from this table and these can be viewed on the MCST website.

International bilateral agreements: Ministry of Science and Technology, China - 2018

On the basis of the Memorandum of Understanding on a Medium-Term Cooperation Plan (2014-2019) signed in July 2014, agreed between the Governments of Malta and China, MCST and the Chinese Ministry of Science and Technology (MOST) were nominated as the implementing agencies for cooperation within research sectors. MCST and MOST, collaborating under the framework of the Joint Commission on Science and Technology, foreseen under the mentioned Memorandum of Understanding, developed a concept for a bilateral and collaborative programme for research. MCST and MOST aim to: i. Strengthen the scientific collaboration between the two countries and to increase the R&D activities; ii. Facilitate the transfer of technology; iii. Maintain a comprehensive, steady and long term cooperation through the support of researchers' mobility, and the networking of industries, universities and research institutions to generate mutually beneficial win-win research. To this effect, each party confirmed a national budget of €350,000 for the eventual funding of one or more projects in the areas of Maritime Services, Maritime Technology, Aquaculture and Transport. It is expected that in 2019, both MCST and MOST will issue an Expression of Interest to invite research entities to present preliminary bilateral proposals

Table 1: Breakdown of CVP project submissions in 2017 and 2018

Submitted Proposals by Sector	2017			2018		
	Number of Proposals	Percentage of Total submissions	Funded projects	Number of Proposals	Percentage of Total submissions	Funded projects
ICT	9	11%	1	12	42%	5
Health	12	25%	3	12	58%	7
Resource Efficient Buildings	8	25%	2	4	50%	2
Aviation & Aerospace	6	33%	2	4	75%	3
Maritime	2	50%	1	3	100%	3
High Value-Added Manufacturing	9	66%	6	7	43%	3
Tourism Product Development	4	0%	0	3	33%	1
Aquaculture	0	0%	0	1	0%	0
Other	1	100%	1	0	0%	0

Table 2: R&I CVP 2017-2018 Report Table with Funded Projects

2017		
Project No.	Entity Name	Status
R&I-2017-002 – V	University of Malta	Technology Development Stage
R&I-2017-003 – V	University of Malta	Technology Development Stage
R&I-2017-005 – V	University of Malta	Technology Development Stage
R&I-2017-012 – V	University of Malta	Completed
R&I-2017-016 – V	University of Malta	Completed
R&I-2017-023 – V	University of Malta	Completed
R&I-2017-025 – V	Laser Engineering and Development Ltd	Technology Development Stage
R&I-2017-026 – V	Celier Aviation Malta Ltd	Exited
R&I-2017-028 – V	University of Malta	Technology Development Stage
R&I-2017-029 – V	University of Malta	Completed
R&I-2017-032 – V	University of Malta	Technology Development Stage
R&I-2017-033 – V	University of Malta	Technology Development Stage
R&I-2017-034 – V	University of Malta	Completed
R&I-2017-037 – V	University of Malta	Technology Development Stage
R&I-2017-038 – V	University of Malta	Completed
R&I-2017-039 – V	University of Malta	Technology Development Stage
2018		
Project No.	Entity Name	Status
R&I-2018-002V	University of Malta	Completed
R&I-2018-003V	University of Malta	Completed
R&I-2018-004V	University of Malta	Ongoing
R&I-2018-005V	University of Malta	Completed
R&I-2018-006V	University of Malta	Completed
R&I-2018-007V	University of Malta	Completed
R&I-2018-009V	University of Malta	Completed
R&I-2018-010V	University of Malta	Fusion Technology Development Stage
R&I-2018-011V	University of Malta	Completed
R&I-2018-012V	University of Malta	Completed
R&I-2018-014V	University of Malta	Completed
R&I-2018-016V	University of Malta	Fusion Technology Development Stage
R&I_2018_021V	University of Malta	Ongoing
R&I_2018_024V	University of Malta	Ongoing
R&I_2018_026V	University of Malta	Ongoing
R&I_2018_029V	University of Malta	Ongoing
R&I_2018_030V	University of Malta	Completed
R&I_2018_031V	University of Malta	Ongoing
R&I_2018_035V	University of Malta	Ongoing
R&I_2018_037V	University of Malta	Ongoing
R&I_2018_039V	University of Malta	Ongoing
R&I_2018_040V	Altern Ltd.	Completed
R&I_2018_041V	Altern Ltd.	Completed
R&I_2018_042V	Epsilon Malta Ltd.	Ongoing

within the set thematic areas. A Call for detailed proposals would then ensue. It is thus expected that successful applicants would be awarded projects for start of works within 2019.

Space and Related Technologies – 2018

In 2018, the Malta Council for Science and Technology continued working hard on capacity building activities within the local space sector. As asserted within the very first Maltese National Space

Policy published in early 2017, there exists a national drive to raise awareness and build capacity related to the exploitation of satellite data, particularly that related to Earth Observation (EO), which is ever increasing. This abundance of data is in-part due to the extensive European Union investments into the development of Copernicus, its own EO programme composed of numerous satellites and in-site sensors delivering data that is relevant to a multitude of thematic areas.

Table 3: R&I 2013 projects list with legacy projects that continued in 2018

Project No	Project Name	Stage	Entity Name
R&I-2013-008	Generating Online Monitors from Tests Automatically	Complete	University Of Malta
R&I-2013-014	Closed-loop Serotonin Optogenetic Stimulation with EEG recording to Suppress Epileptic Seizures: A Therapeutic Device	Final	University Of Malta
R&I-2013-023	Offshore Passive Photovoltaics	Final	MCAST
R&I-2013-025	CLEAN-FLIGHT 2	Intermediate	University Of Malta
R&I-2013-028	Thermal Imaging for Peripheral Vascular Disease Monitoring in Diabetics	Complete	University Of Malta
R&I-2013-041	Malta Human Genome Project	Complete	University Of Malta

Table 4: R&I 2015 TDP projects list with legacy projects that continued in 2018

Project No	Project Name	Stage	Entity Name
R&I-2014-001T	Melissa Medi	Complete	Melissa Medi Ltd.
R&I-2014-026T	Innovative Solvent Recycling Technology	Complete	Universal Import & Export Ltd.
R&I-2014-027T	Innovative High Power LED Luminaires for Sports Applications	Complete	Altern Ltd.
R&I-2014-028T	Field Trials for Ultrawideband Antenna	Complete	University Of Malta
R&I-2015-001T	Studies of the Effects of Aspirin on Metabolism and Programmed Cell Death in Redox Compromised Yeast Cells	Final	University Of Malta
R&I-2015-015T	Advanced Aircraft-Pilot Interaction with Emerging Technologies	Intermediate	University Of Malta
R&I-2015-024T	Multi Camera High Frame Rate Synchronisation	Intermediate	University Of Malta

Table 5: R&I 2016 TDP projects list with legacy projects that continued in 2018

Project No	Project Name	Stage	Entity Name
R&I-2015-023T	Development of a Low-Wearing Novel Metal on Metal Hip Joint Prosthesis for a Longer Lifespan	Final	University Of Malta
R&I-2015-042T	Development of a Novel Device to Support Children with Language Impairment in a Bilingual Context	Final	University Of Malta
R&I-2015-043T	eMRO	Terminated	University Of Malta
R&I-2015-044T	Development of Hydro-Energy Storage System for Offshore Multi-purpose Floating Platforms	Final	University Of Malta
R&I-2016-066T	Accurate Cancer Screening Tests	Final	University Of Malta
R&I-2015-047T	A Smart Micro Combined Heat and Power System	Intermediate	University Of Malta
R&I-2015-037T	Smartcopter Hybrid C-66	Terminated	Celier Aviation Malta Ltd.
R&I-2015-016T	Smart Flight Data Monitoring	Final	University Of Malta

Table 6: Projects Awarded under the Technology Development Programme during 2017

Project No	Project Name	Stage	Entity Name
R&I-2015-032-T	Brain Controlled Applications	Intermediate	University Of Malta
R&I-2016-013-T	Datadear	Intermediate	SCOPE Solutions
R&I-2016-022-T	Novel Evaporative Cooled Battery Technology	Intermediate	University Of Malta
R&I-2016-010-T	Eye-Gaze Tracking in the Wild	Intermediate	University Of Malta
R&I-2015-048-T	Food Inspection Using Hyperspectra Imaging	Intermediate	University Of Malta
R&I-2016-040-T	Recycling of Inert Building Construction Waste Power System	Initial	University Of Malta
R&I-2016-033-T	Situation Awareness and Traffic Management for Engineless Taxiing	Intermediate	University Of Malta

Table 7: Projects Awarded under the Technology Development Programme during 2018

Project No	Project Name	Stage	Entity Name
R&I-2017-037T	Biodegradable Iron for Orthopedic Scaffold Applications	Initial	University Of Malta
R&I-2016-035T	Smart Single Phase Motor Soft Starter without Starter Capacitor	Initial	Carlo Gavazzi Ltd.
R&I-2017-002T	Face Image Restoration using Deep Learning	Initial	University Of Malta
R&I-2017-039T	Advanced Revolutionary Manufacturing Solutions and Development of novel GFRP Composit Poles	Initial	University Of Malta
R&I-2017-003T	Ride-Centered Product and Services for Designing Safer Motorcycles	Initial	University Of Malta
R&I-2016-031T	Crop Intelligent Tools	Initial	MCAST
R&I-2017-028T	Development of a Mechanical and Control Framework for a Minimal Anthropomorphic Prosthetic Hand	Initial	University Of Malta
R&I-2017-025T	Development of a 3D Printing Head with Laser Melting for Printers using FFF Technology	Initial	Laser Engineering & Development Ltd.
R&I-2017-032T	Active Control Sidestick for Aircraft Ground Operations	Initial	University Of Malta
R&I-2017-033T	Auxetic Oar Grips for Pain Free Rowing	Initial	University Of Malta
R&I-2018-016T	Dense recording of Inside Foot Temperatures	Initial	University Of Malta
R&I-2017-005T	Kinetic Energy Recovery System for a Landing Aircraft	Initial	University Of Malta
R&I-2018-010T	Smart Artificial pilot	Initial	University Of Malta

While the organisation of awareness-raising events is instrumental in maintaining a momentum that helps clear misconceptions about the space sector, the next natural step would be to progress to capacity-building through the support of expert entities. While the space sector in Malta is still in its inception phase, tangible capacity-building measures become ever more critical. Training and collaborative opportunities for public-private projects, as well as internationalisation efforts where possible, provide the means for developing critical

mass. It is well recognised that the establishment and implementation of collaborative agreements with key space players is an important building block to help build local capacity and knowledge in the sector. Consequently, MCST continued to strengthen relationships with entities of substantial heritage within the sector, notably with the French Space Agency (CNES) and the Italian Space Agency (ASI). Apart from partnering on awareness raising initiatives, such bilateral agreements enable the exchange of personnel and partnership on

space-related research projects, particularly those related to EO data processing and small-scale technology development. In 2018, MCST issued an Expressing of Interest (EOI) to all Maltese stakeholders interested in collaborating with their French and Italian counterparts; a collaboration that will be enabled through the respective bilateral agreements. The EOI was an important prerequisite to develop an effective collaboration. It aids MCST to take stock of the local interest in the space sector and approach the foreign space agencies accordingly.

Most notably, in 2018, MCST intensified its collaboration with the European Space Agency, Europe's gateway to Space. The 2012 Malta-ESA Cooperation agreement, which had been renewed for an additional five years until 2022, continues to offer training and research opportunities that undoubtedly help local awareness-raising and capacity building.

Considering results of the 2015 ESA technical visit, and its willingness to maintain a continued momentum in the sector, in 2018 MCST established a €2M national fund exclusive to the Maltese space sector. The ultimate objective of the National Space Fund, which is to operate from 2018 to 2022, is to tangibly aid local capacity-building in line with Malta's current and immediate priorities. This national initiative, supported by ESA through an Implementation Arrangement signed in March 2018, is indeed a milestone within the Maltese Space sector. The fund establishes two priority areas over a five-year period: a Space Research Fund and a Space Education Programme.

Space Research Fund

This new funding programme, launched in 2018 exclusively to Maltese beneficiaries, disburses funds to research projects within the local Earth Observation downstream sector, specifically projects that exploit satellite data for the benefit of Maltese end-users. The Space Research Fund is supported through technical contributions by ESA and Malta Enterprise, Malta's economic development agency. The programme operates on yearly competitive calls and awards grants for 20-month projects up to a maximum value of €150,000.

As beneficiaries of this new research programme, Maltese public, private, research and academic entities have the opportunity and the funds, to truly explore the potential harboured by satellite data over various thematic areas. This enables them to initiate a track-record within space research that helps close-down disparities between Malta and established players. This approach helps better position Malta in terms of accessing regional markets on satellite data and related research and the eventual provision of new products and services.



The National Space Fund (2018-2022) concretely aids capacity building in Maltese space sector

Contains modified Copernicus Sentinel data (2017), processed by ESA

More information on the Space Research Fund available at <http://mcst.gov.mt/space-directorate/space-research-fund/>

Space Education Programme

In a continued effort to raise awareness on space applications and related sectors, in 2018 MCST was supported by ESA to embark on a Space Education Programme for Maltese schools. This education programme seeks to continue bridging the gap between space applications and society. It aims to drive into Maltese classrooms the relevance of space-related data in better approaching challenges here on Earth. The 2018 Space Education Programme consists of AstroPi and CanSat activities targeting primary, middle, secondary and post-secondary schools. These initiatives, which are funded through the National Space Fund, were both launched at the start of the 2018/9 scholastic year. Hence, the National Space Fund seeks to not only motivate today's specialists, but to also inspire the professionals of tomorrow. More information on the Space Education activities available at <http://mcst.gov.mt/space-directorate/sep/>

Scheme For The Provision Of Proposals Aimed At A Holistic Approach To The Sustainable Management Of Livestock Manure And Slurry Within A Circular Economy Context

The Malta Council for Science and Technology (MCST) was the managing authority for the "Scheme For The Provision Of Proposals Aimed At A Holistic Approach To The Sustainable Management Of Livestock Manure And Slurry Within A Circular Economy Context". The funds for this scheme were made available to MCST by the Governance of Agriculture Bio Resource Agency (GAB). The scheme made available financial support to organisations that were interested in developing a business plan for the management of the entire slurry and manure generated within the Maltese territory or parts thereof. At present, available standard technology does not suit local conditions, and as a result, modifications to currently available 'on the shelf technologies' needed to be tried and tested before actual information on their feasibility can be concluded.

Seven (7) proposals were submitted of which and three (3) projects were selected for a total funding of €428,792.00. Submissions under this scheme were evaluated by a pool of independent experts in accordance with the criteria set in the rules of participation. The grant agreements of the three (3) projects were signed in June 2018. The final Technical Reports and Feasibility studies were submitted in end 2018 and forwarded to GAB for further elaboration and consolidation into a report for consideration by the Ministry for the Environment, Sustainable Development and Climate Change. The below table provides a list of funded projects:

Project number	Project title	Beneficiary/ies	Funding
GAB_2018_002	Proposal for the Treatment for Livestock manure and slurry by means of Pyrolysis and De-nitrification of water	PT Matic Environmental Services Ltd.	€147,720
GAB_2018_004	Assessing cutting edge pig slurry treatment technologies for Malta within the principle of a circular economy	C & F Enterprises Ltd. & Cavalier Trust Services. Ltd.	€149,333
GAB_2018_007	Mobile Separator System with Recycling for Nine Livestock Farms in Gozo	Farm Owners Group & Services Ltd.	€131,739





The background is a deep blue gradient. It features several white, thin, curved lines that resemble orbits or paths. Scattered throughout the blue area are numerous small, semi-transparent blue circles of varying sizes, giving the impression of particles or stars. The overall aesthetic is clean, modern, and scientific.

HORIZON

2020 Unit



Horizon 2020 Unit

Horizon 2020 (H2020) is the European Union's largest Research and Innovation Programme, with nearly €80 billion in funding. Running from 2014 to 2020, the programme has the overarching goal of creating new growth and jobs in Europe.

The Programme will run until 2020 with the respective Work Programmes and calls being published in July 2018 and 2019. In 2018, the European Commission announced a proposed budget of €100 billion for the next EU Research and Innovation Programme called Horizon Europe, which will be launched in January 2021.

Horizon 2020 provides opportunities for Maltese researchers and organisations to be at the forefront of research and innovation and to collaborate with leading organisations across Europe and the world.

In 2018, 20 new Grant Agreements were signed by 23 Maltese organisations amounting to €4.2 million for these Maltese entities. As from 2014 until end of 2018, total of 107 Grant Agreements were signed, amounting to over €20 million of funding granted to Maltese entities.

Horizon 2020 is structured around 3 main pillars:

1. **Excellent Science** – forward-looking and long-term oriented activities aimed at reinforcing and extending European excellence in basic science in order to further the European Research Area and make European research and innovation systems more competitive.
2. **Industrial Leadership** – aimed at making Europe a more attractive location to invest in research and innovation by speeding up the development of technologies and innovation that will enable competitive growth and helping innovative SMEs to grow into world-leading companies.
3. **Societal Challenges** – aimed at bringing together resources and knowledge across different fields, technologies and disciplines to address major concerns shared by citizens in Europe and beyond.

The Programme also includes additional actions such as Spreading Excellence and Widening Participation aimed at increasing the participation of low-

performing Member States, and Science with and for Society (SwafS), which seeks to build capacities and develop innovative ways of connecting science to society.

New features of the Horizon 2020 Programme
The final Work Programme (2018-2020) for Horizon 2020 builds on the success so far and takes into account the interim evaluation outcomes and the European Commission's political priorities, paving the way for its successor.

New features include:

- Measures to support market-creating innovation through the **European Innovation Council (EIC)** which is open to innovations in any technology or sector including cross-cutting technologies. The aim is to support innovative firms and entrepreneurs to scale up their businesses rapidly at European and international levels. This will help Europe to better capture innovative ideas with the potential to create new markets and strengthen the industrial base.
- **'Focus Areas'** will support the Commission's political priorities by creating an exceptional impact in the following fields:
 - o A low-carbon, climate resilient future;
 - o Circular Economy;
 - o Digitising and transforming European industry and services;
 - o Security Union;
 - o Migration.
- **Enhancing International Cooperation** to better deliver on global commitments.
- Enhancing the **Spreading Excellence** programme to contribute to narrowing the innovation gap in Europe by supporting Widening Fellowships.
- Further **simplification** by introducing the lump-sum pilot and more two-stage calls to improve the programme's success rate.
- Promoting **Open Science** by shifting from publishing research results in scientific publications towards sharing knowledge sooner in the research process.

National Support Network and Programme Committees

National Contact Points (NCPs) play a crucial role in the successful application of national stakeholders. The main task of the NCPs is to provide professional, practical and free information and support to potential applicants on all aspects of participation in Horizon 2020. The Horizon 2020 Unit within the Malta Council for Science and Technology supports Maltese organisations (from academia, public and private sectors) and individual researchers at all stages of participation.

The Unit's activities include:

- Guidance on choosing relevant Horizon 2020 topics and types of actions;
- Dissemination of information through information sessions, presentations at events, mail shots and social media;
- Advice on administrative procedures;
- Assistance in partner searches;
- Review of proposals before submission;
- Assistance in project management.

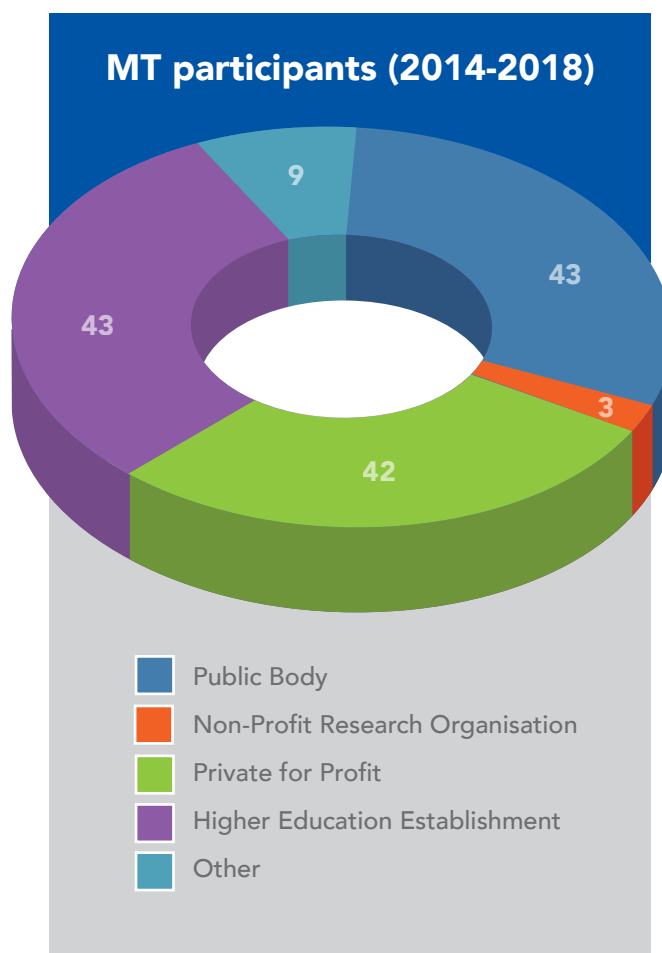
In 2018, over 140 one-to-one meetings with Maltese stakeholders were held by the NCPs. A number of information sessions and outreach events were also organised as described below.

The National Contact Points are also members of the Programme Committees (PCs) of the individual Societal Challenges or programmes. Programme Committee delegates (PCs) represent and lobby for National priorities at EU level in the areas assigned to them. The main aim is to lobby for Maltese interests in any consultations and propose any specific topics which are of interest to Malta by gathering support from other Member States and Associated Countries.

Our network of NCPs and PCs will continue to build on Malta's good performance in the first 5 years of the programme, by providing hands-on support to Maltese researchers and organisations, to enable them to actively participate in H2020 and to improve success rates during the final years of the programme.

Malta's participation in Horizon 2020 so far

Since the start of Horizon 2020, 107 Grant Agreements involving 140 Maltese entities have been signed. The amount of EC funding going to Maltese entities is over €20 million.



COST

The European Cooperation in Science and Technology (COST) is the longest-running European framework supporting the creation of interdisciplinary research networks across Europe. It operates mainly through what is called a COST Action. This involves a team of researchers, industry, SMEs, NGOs and other interested parties working in a particular area that team up to collaborate across borders and disciplines. It has been a frontrunner in bridging the gap between policy, research and end users. COST has increased the impact of the national investments in research and S&T innovation on a European scale. Over the course of its 40-year history, COST has provided a unique approach enabling the sharing of ideas and scientific developments across its **38** European members and beyond.

COST in Malta is managed by the Malta Council for Science and Technology. Through MCST, Malta has been a member of COST since 1997 and is presently participating in **291** COST Actions. In 2018, researchers based in Malta joined **60** new COST actions. In addition, more than **173** researchers based in Malta benefited from COST participation in various areas. Key contributions were made in the fields of new diagnostic and therapeutic tools against multidrug-resistant organisms, public-private

partnerships in transport, a European network for argumentation and public policy analysis and mechanochemistry for sustainable industry. Moreover, Malta was successful in coordinating its first COST action: European network for advancing electromagnetic hyperthermic medical technologies, MyWAVE, in 2018. In all **34** COST-related meetings were organised in Malta.

JRC

The Joint Research Centre (JRC) is the European Commission's science and knowledge service which employs scientists to carry out research in order to provide independent scientific advice and support to EU policy. Based on scientific expertise and competences within the JRC, as well as on the collaboration with the wider scientific community, the JRC aims to ensure that the best scientific advice possible informs policy development and that scientific rigour is applied when analysing research conducted elsewhere.

JRC actively supports the European standardisation process, which is one of the key framework conditions for facilitating innovation, competitiveness and growth. Standardisation has to be based on sound scientific data and on sound measurement methodologies and techniques for standards to keep pace with the state-of-the-art. The JRC supports the link between pre-normative research with standardisation in both directions: by feeding pre-normative research results into standardisation, and vice-versa, by feeding needs for pre-normative research coming from the standardization activities into research activities.

The cooperation between JRC and Maltese partners focuses on prevention, preparedness and response to disasters, nuclear emergencies, radiological data and monitoring, and digital technology.

Horizon 2020 Events

Throughout 2018, a number of information sessions and outreach activities were organised by the Horizon 2020 Unit with a view to promoting the programme with stakeholders and potential participants. The Unit also participated in outreach events organised in collaboration with other entities.

- **How to implement Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology** 29th January 2018
This event focused on the Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology strand within the Industrial leadership pillar of the

H2020. Local researchers were invited to present their work in this context. The research presented ranged from nano-engineered photovoltaics to metallurgy characterisation techniques and biotechnology. Industry was represented by a private company working on additive manufacturing. Academia was represented by a researcher who explained his work on genotoxic and metabolic outcomes in iron oxide nanoparticles. The Commission was represented by Dr. Nicholas Deliyannis, Deputy Head of Unit, Industrial Technologies Strategy at DG Research and Innovation, at the European Commission, who gave an overview on the NMBP Work Programme 2018-2020. Presentations were also delivered by the Health and NMBP NCPs on the Bioeconomy and NCP role & support services respectively.



- **H2020 Outreach Event, 5th April 2018**
This outreach event was organised at the University of Malta as part of a series of one-to-one consultations prepared by NCPs for selected University researchers. 12 researchers and 4 NCPs from the H2020 Unit had a productive discussion on open and upcoming calls.
- **Marie Skłodowska-Curie Actions (MSCA)/ Widening Info Day at UoM, 21st June 2018**
On 21st June the H2020 Unit and the Research Support Services Directorate (RSSD) of the University of Malta jointly organised an event on MSCA/Widening on the premises of TAKEOFF. The event was aimed at promoting the Individual Fellowship Actions of MSCA as well as Twinning and ERA Chairs calls. The event was attended by 30 to 35 researchers. NCPs presented the actions and upcoming calls. Two success stories (MaltaPOT, IF project and TrainMALTA, Twinning project) were also showcased.
- **Info Session at Malta Communication Authority (MCA), 8th October 2018**
The Horizon 2020 Unit visited the Malta Communication Authority with an information session on the Framework Programme. An overview of the H2020 structure, participation

criteria, types of action, proposal structure and upcoming topics was delivered. NCPs then focused on the topics of Cloud Computing, 5G long-term evolution and Next Generation Internet. This event led to the participation of MCA in a Horizon 2020 proposal which was placed on the reserve list.

- **Info Session at the Malta College of Arts, Science and Technology (MCAST), 17th October 2018**

On 17th October 2018, the Horizon 2020 Unit organised an information session aimed at researchers working at the Malta College of Arts, Science and Technology. The presentation took the audience through the main features of the Horizon 2020 programme, from eligibility criteria and funding rates to evaluation procedures and tips on how to structure a proposal. The aim of this session was to encourage researchers at MCAST to engage with this funding programme and make use of the services offered by NCPs. A Q&A session followed.

- **Proposal Writing Workshop, 8-9th November 2018**

In November, the H2020 Unit organised a 'Proposal Writing Workshop' aimed at improving the proposal writing skills of Maltese researchers and entities. The training was delivered by Katia Insogna, Head of Training and Consultancy Services at **InnoTecUK**. The workshop included a brief introduction to the objectives and structure of the Horizon 2020 programme, as well as an interactive session where the participants had to work on a proposal based on two open calls taken from the Environment and Transport Work Programmes. Participants had to work in groups and choose a rapporteur to 'sell' their proposal at the end of the session. The groups were asked to develop project ideas based on these topics including objectives, consortium, work plan and budget. The trainer provided feedback to the participants throughout the whole process and made concrete suggestions as to how their proposal could be improved.

The NCPs were also invited to present the Programme or set up stands at a number of other events including the **Annual Water Conference - The Science and Creativity in Water** in March; the **Blue Biotechnology Cluster Event** and the **Sustainable Development of the Blue Economy** Event both organised by Malta Marittima in March



and April respectively; **Science in the Citadel Event** in April; **Europe Day** activities in May; **Malta Innovation Summit** in October; and **Investing in Energy Closing Conference** organised by the Malta Business Bureau in December.

Projects

Through the Horizon 2020 Unit, MCST participates in a number of H2020 projects. The following projects were active in 2018:

BLUEMED

The BLUEMED CSA is a four-year project that was launched in October 2016 to support the BLUEMED Initiative. The project is coordinated by CNR in Italy and has eleven partners in nine different countries. Its main aim is to bolster blue growth in the Mediterranean by promoting the implementation of the BLUEMED Strategic Research and Innovation Agenda (SRIA).

The project was particularly active in 2018, with the launch in May of the Call for Strategic Start-up Actions on Blue Growth in the Mediterranean. This Call was open to entities working in marine and maritime research in Europe and beyond. Applicants were asked to form a partnership and conduct workshops leading up to a feasibility, foresight or demonstration project on a theme deemed crucial to the development of blue growth in the Mediterranean. As Work Package leader, MCST coordinated the drafting of the Call's Terms of Reference and organised the evaluation by independent experts of the 27 proposals received.

The outcome of the evaluation process was announced in September, with the kick-off meeting of the four selected Start-up Actions scheduled for January 2019.

In January 2018, MCST organised a Coordinators' meeting at Villa Bighi. 28 Coordinators of different EU and national projects met to discuss synergies and future collaborations as well as ways of tackling fragmentation and duplication of efforts.

Throughout the year, MCST also contributed to other tasks and activities such as updates of the BLUEMED SRIA, meetings of Platform coordinators, Research Funders Workshops, a paper on research infrastructures and a White Paper on the Blue Economy in Malta, as well as dissemination activities. MCST also represents Malta at the meetings of the Group of Senior Officials Working Group, an overarching body tasked with the promotion and extension of the BLUEMED Initiative to non-EU countries.

Enterprise Europe Network (EEN)

– MELIITA 2

EEN is the largest support network for Small and Medium-sized Enterprises (SMEs) aimed at assisting businesses innovate and grow on an international scale. Throughout 2018 the consortium continued to provide the full range of EEN services to support the local SME community and to encourage cross-border collaboration. A number of EEN matchmaking events and company missions were organised. These events were also promoted by MCST's EEN representatives.

An annual consortium meeting with senior representatives from the EEN consortium was

organised in December to provide updates on the project's outcome in 2017 and 2018, and the impact of the project's activities on the growth of local SMEs. Plans and forecasts for 2019 were also presented.

The project MELIITA 2 ended in 2018. Its successor, MELIITA 3, will commence in 2019. The new project aims to contribute to a better and more efficient connection of European and Maltese stakeholders along the innovation chain.

EURAXESS Portal

EURAXESS is a unique pan-European initiative providing access to a complete range of information and support services to researchers wishing to pursue their research careers in Europe or stay connected to it. EURAXESS is a key initiative in supporting the commitment of the European Union to remove the barriers of free movement of knowledge within Europe, to strengthen cross-border mobility of researchers, students, scientists and academic staff and to provide researchers with better career structures.

In 2018, the Maltese EURAXESS portal was updated with new content, including new images aimed at rendering the various sub-pages more visually appealing.

EURAXESS Top III

The EURAXESS Top III project ended on 31st August 2018. The project aimed to strengthen and consolidate the work of the EURAXESS members through capacity building; build on the results of the former EURAXESS projects and ensure continuity and develop new services. All the tasks where MCST was involved were completed and the relevant deliverables submitted.





From Horizon 2020 to Horizon Europe

In May 2018, Carlos Moedas, Commissioner for Research, Science and Innovation announced the name of the new Framework Programme, Horizon Europe: "Horizon", to continue building on the reputation built by Horizon 2020, and "Europe" to show the collective strength of all Member States.

In June 2018, the European Commission published its proposal for Horizon Europe, an ambitious €100 billion Research and Innovation Framework Programme that will replace Horizon 2020. The proposal was made as part of the EU's proposal for the next EU Multiannual Financial Framework (MFF).

The new Framework Programme will run from 2021 to 2027 and its main objectives will be to strengthen the EU's scientific and technological bases, contributing to achieving the Sustainable Development Goals and boosting the Union's competitiveness.

Horizon Europe will incorporate policy missions to ensure the effectiveness of research and innovation funding by pursuing clearly defined targets. The new Programme will include a number of missions which will specifically target global challenges. Such missions will make it easier for citizens to understand the value of investments in research and innovation and maximise the impact of investments. The targets will be clearly measurable and need to be achievable with a portfolio of research and innovation measures.

During 2018, the Horizon Unit worked hand-in-hand with the Policy, Strategy and Internationalisation Unit by providing technical expertise and feedback on Horizon Europe during the Council's negotiation process.

Outlook for 2019

In 2019, the Horizon 2020 Unit will continue supporting Maltese researchers and entities in participating actively in Horizon 2020. The Unit will be working jointly with the National Research and Innovation Programmes Unit to introduce new schemes that will further encourage participation in the Framework Programme. Such schemes include the Seal of Excellence, for proposals having been awarded this label by the Commission, and a support scheme for proposal preparation aimed at increasing the number of project coordinators from Malta.

The background is a vibrant blue gradient. It features several large, thin white swooshes that curve across the frame. Scattered throughout are numerous small, semi-transparent blue circles and dots, some of which are slightly blurred, giving a sense of motion or particles. The overall aesthetic is clean, modern, and scientific.

Esplora

Interactive Science Centre



Esplora Interactive Science Centre

Our vision

is to cultivate a culture of scientific curiosity and creativity

Our mission

is to ignite a passion for questioning, investigation & discovery

Our core values

are to explore, think, imagine, create & appreciate

Esplora Organisational Development

As the public-facing unit of MCST, Esplora is an informal education, visitor attraction suited to visitors of all ages and interests. Esplora aims to offer visitors the opportunity to experience science as fun, exciting, and enjoyable through hands-on experiences and phenomena-related exhibits, and a range of workshops, science shows, activities and events.

The adoption of the STEAM approach (the inclusion of Art in the communication of Science, Technology, Engineering and Mathematics - STEM) at Esplora creates the space to communicate the importance of the scientific processes through all of our experiences, allowing visitors to question, predict, experiment, analyse and make conclusions. In the first quarter of 2018, after over a year of operations, an international science centre, learning and operations consultancy company was contracted to assist in the mapping out of the organisational development required prior to the EsploraNatura expansion. An audit of Esplora's operations was conducted, followed by the design and delivery of bespoke training and

consultancy across the organisation. The impact of this exercise was a sharpened sense of direction and the implementation of operational and tactical strategies to ensure the alignment of individual and team objectives with organisational key performance indicators.

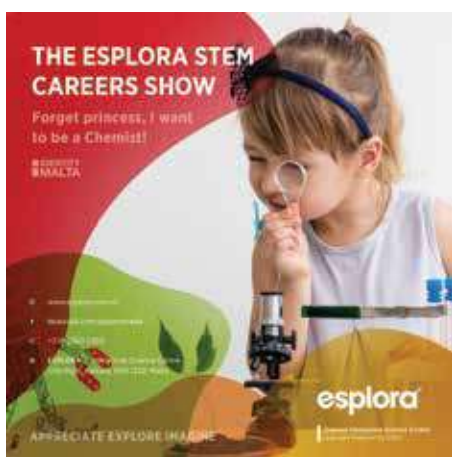
Esplora Key Achievements 2018

In 2018, Esplora Interactive Science Centre received a total of 85,724 visitors, 40,228 of whom were students. The majority of Esplora's visitors were local families and groups, who visited the science centre during their free time, primarily on the weekends and during the school holidays. In an attempt to encourage more school group visits several actions were taken. Discussions were initiated to facilitate schools with transportation costs. Educators were encouraged to gain knowledge and experience of Esplora by being invited to the Education Programme Launch event in October 2018. Free access to Esplora for educators and their families was introduced, along with complimentary tickets for students as prize day tokens. Esplora also continued to forge close working relations with educators, the Malta College

of Arts, Science and Technology (MCAST), the University of Malta and the Ministry for Education and Employment.

The target number of 1130 outputs was far exceeded, with the delivery of a total of 1980 science shows, workshops and planetarium shows, including four outreach activities in Gozo. To further attract visitors to the planetarium experience, Esplora Science Communicators were trained by Glasgow Science Centre in the delivery of live, presenter-led planetarium shows, adding to the repertoire of the available content.

Esplora worked intently to increase the involvement of experts and collaborations with major STEAM players in its Education Programme and Calendar of Events. This resulted in the commitment of approximately forty entities contributing to ten science related events for STEM stakeholders and thirteen temporary exhibitions involving industry/academia showcases, bringing visitors closer to the application of science.



Esplora in Figures

- **100%** of visitors would recommend Esplora to family or friends*
- over **43%** of visitors surveyed had visited 2 – 5 times in the last year*
- over **38%** of visitors surveyed rarely visit museums*
- **29%** of visitors learnt about Esplora by word of mouth, **23%** via Facebook*
- By the end of 2018, Esplora's Facebook page had reached 17,896 followers, majority being women aged 35-44

** Results from Audience Development Surveys (October – December 2018)*

Projects and Initiatives 2018

In addition to the Education Programme and Calendar of Events, Esplora endeavours to enrich its offer by accessing funds and collaborating with

other entities to co-develop, produce and/or deliver content and also provide professional development opportunities for staff.

FameLab 2018

This year marked the second year FameLab was organised by Esplora. FameLab is an annual science communication competition for scientists and researchers across the globe and forms part of the annual Cheltenham Science Festival, UK. FameLab seeks science professionals, researchers and students who would like to communicate science in a different way to the public. This serves as exposure for their work, as well as an experience in the public engagement and communication.



Following the competition application promotion with students at the University of Malta and MCAST, seven successful applicants attended a masterclass on the 17th and 18th of February led by an internationally renowned science communication expert. The winner of the national final held at Esplora on the 13th of April, represented Malta in the international FameLab competition on the 6th of June and successfully got through to the semi-finals.

The budget for this project was Euro 5000. The main funds were committed by the Arts Council Malta (Euro 2500) and Esplora (Euro 2500).

The Strange Travels of Señor Tonet

Between the 28th of March and the 1st of April 2018, Esplora hosted a curiosity fair, full of fun, interactive mechanical installations. At the fair, a peculiar character, Señor Tonet, introduced visitors to the many creatures encountered on his strange and wondrous journeys by means of individual installations set inside a box, each one reflecting a different story. This exhibition was free to the public.

Prior to the opening of the installation, the installation designers teamed up with Esplora and technical students from MCAST to create a new mechanical exhibit, tailored specifically for Valletta2018, which was subsequently donated to Esplora. Esplora contributed to this project by



providing the artists and students with access to the maintenance workshop and tools, and providing the venue and staff for the exhibition whilst at Esplora. All other costs were sponsored by the Valletta2018 Foundation.

Artist in Residency, Science through Storytelling

A three-part programme was coordinated and facilitated in collaboration with the Valletta2018 between the 1st of September 2017 and the 31st



of October 2018. The aim of the programme with a budget of Euro 10,000 was to communicate science through storytelling and to combine Science with Art.

An International Artist in Residency was awarded to a Greek artist who visited Esplora between the 16th of April and the 28th of May 2018 to explore, think, observe and link the factual with the abstract of the day-to-day culture of Esplora. The end-product was the creation of a storytelling performance to highlight all of this. The public performance, entitled Plantarium, was held on the 28th of May 2018 with the participation of a local village band.

Two Italian artists delivered an international masterclass on Science and Art between the 24th and the 28th of September 2018 to Esplora staff to better communicate science through stories and bridge the gap which exists between Science and Art.

A local professional storyteller worked hand-in-hand with a foreign artist from 11th to 13th July 2018, to develop a storytelling, in-service course for primary

school teachers on Science through Stories. Two sessions were delivered to a total of 40 teachers from state, private and church schools. To ensure a legacy, Esplora, in collaboration with the storyteller, began the process of accrediting the Continuing Professional Development (CPD) sessions so that it can continue to be offered year after year.

Up-Skilling in Science Communication

This is a Key Action 1: VET Staff Mobility project financed by Erasmus+ funds with a grant of Euro 31,520. The project started in August 2018 and will run for twelve months. It is a collaboration between MCST and Glasgow Science Centre in Scotland and Heureka, the Finnish Science Centre. Sixteen different Esplora staff members, from different sections had the opportunity to attend job-shadowing experiences; two opportunities in Finland and one in Glasgow. This project was aimed at modernising and internationalising Esplora's mission, that of instilling a culture of scientific curiosity and creativity within the STEAM fields. It is strategically designed to respond to clearly identified staff development needs through appropriate selection, preparation and follow-up measures; and ensures that the learning outcomes of participating staff are properly recognised, disseminated and widely used within the organisation. Through these job-shadowing experiences, Esplora aims to up-skill its employees in the field of science communication. Through sharing of experiences and best practices with two of the best European Science Centres, Esplora aims to better reach the following strategic values: a) Connecting with Visitors, b) Science Education, c) Scientific Hub for the Community, d) Science Communication, e) Sustainability and f) Esplora Culture.



Grandma got STEAM

In September 2017, Esplora was awarded a grant of Euro 8000 from the *Il-Premju tal-President għall-Kreattività* for Grandma got STEAM, an intergenerational project that brought together a group of ten young people from Youth.Inc within Aġenzija Żgħażaġh and five women with successful



careers in STEAM. Curated by Esplora and Spazju Kreattiv, the participants worked with a storyteller, an illustrator and a photographer in a series of storytelling workshops held throughout 2018 to develop a pack of illustrated storytelling cards that features characters and plots drawn from the life and work experiences of the women. The pack, which functions as a storytelling tool and may be used by educators and mentors to facilitate sessions in their schools and communities, was officially launched on the 9th of November 2018.

The first part of the project consisted of the Storytelling Workshops conducted with the Grandmas and Youths at Esplora. The stories included the Grandmas' journeys in life and work, the opportunities they were given and obstacles that they faced. A rich tapestry of emotions, memories, hopes and dreams emerged, which were captured in the storytelling pack with settings, characters and plots drawn from real life.

The design of the storytelling card pack was created by the storyteller and illustrator to bring the cards to life. The final part of the project consisted of Train the Trainer Sessions with Aġenzija Żgħażaġh, Esplora and the elderly carers from homes, nominated through the Active Ageing and Community Care Department.

Through this project the better visibility of careers of women in STEAM was achieved. Esplora also worked with hard-to-reach, vulnerable youths coming from Youth. Inc. Youth workers described this experience for the youths as a blessing and life changing.

ELLS Learning LAB entitled "Genes, Research and Disease: Discovering Genomics for the Classroom"

An ELLS Learning LAB entitled Genes, Research and Disease: Discovering Genomics for the Classroom was held at the Faculty of Health Sciences, Mater Dei Hospital between the 12th and the 14th of September 2018. During this course, twenty-four secondary school and sixth form science teachers from Malta and Europe took part in this very first international teacher training in Malta. The training

was fully funded by the European Learning Laboratory of EMBL (EMBL-ELLS) and was organised in collaboration with the Ministry for Education and Employment of Malta, the Department of Applied Biomedical Science, Faculty of Health Sciences, University of Malta, and Esplora.

The course focused on cutting-edge topics in genomics, such as the latest developments in genetic engineering and sequencing technologies, and its role in understanding health and disease. In a mix of seminars and lab experiments, participants got first-hand insight by scientists from EMBL and the University of Malta. The practical aspect of the course trained teachers in using basic molecular biology techniques and illustrated how these can be integrated into school lessons. Furthermore, the course also included a visit to the Malta Life Sciences Park and Esplora.



Culture Pass Programme for the Scholastic Year 2018/19

The Outreach Programme at Esplora in collaboration with the Culture Pass Programme for the scholastic year 2018/19 of Arts Council Malta offered four different dance performances and workshops for primary and secondary school students.

Newton's Laws of Motion is a collaboration with an Esplora staff member as a narrator performing on rollerblades, that acts out Sir Isaac Newton's Laws of Motion through comical, physical theatre, covering the topics of forces and motion for students from Years 8 to 10. It's a Matter of State shows how molecules move in a solid, liquid or gas. It covers the two topics of molecules and states of matter for students of from Years 3 to 8. PlastOcean deals with ocean pollution through the discharge of plastic waste in the oceans, for students from Years 1 to 6 and covers the topics of plastic, oceans and the 4 Rs – Reduce, Reuse, Recycle and Recovery. Your Voice Affects Me tackles the subject of psychology with regard to media through non-verbal communication



in public, suitable for students from Years 5 to 11. This project adopts the STEAM educational approach, addressing the difficulties which students face when challenged with being creative, which is also part of Esplora's core ideology. Esplora science show presenters worked hand-in-hand with local artists through the sharing of good practices.

C-SDGs; Embracing the Sustainable Development Goals through Creative Arts

C-SDGs is a Key Action 2: Strategic Partnerships project financed by Erasmus+ funds with a grant of Euro 199,735. It is a collaboration between eight organisations, four from Malta (MCST, University of Malta, Lignin Stories and Fondazzjoni Ċentru Kreattività) and four from other European countries (Copernicus Science Centre, Picapipe, Seven

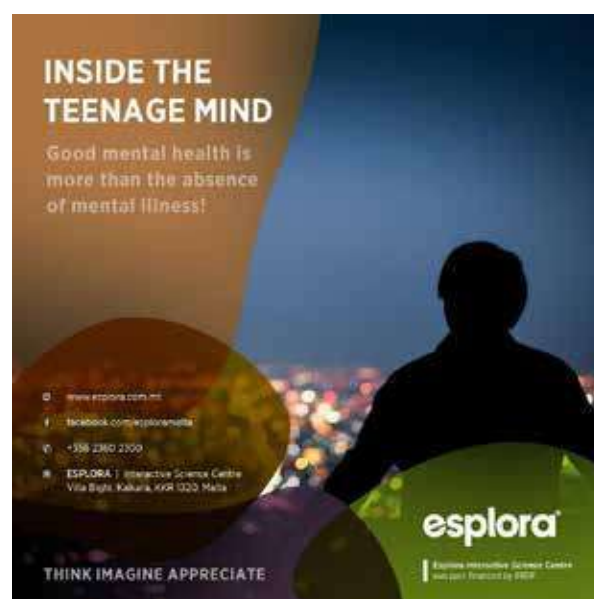


Stories and Hodworks), acting as their international counterpart. The project addresses the United Nations' 2030 Sustainable Development Goals (SDGs) focusing on three in particular: #14 Life Below Water, #4 Quality Education and #5 Gender Equality. The SDGs are expressed through three creative art forms: digital games, storytelling and dance, in order to raise awareness of these global issues through innovative methods of learning, in an informal environment. The outputs from these collaborations will be freely available for everyone to download but will be firstly exhibited in the two science centres. The beneficiaries will have the opportunity to explore scientific concepts through

creative forms, transcending traditional barriers, and learn best practice through training experiences and meetings. The project will run from November 2018 to August 2021.

The Voice Inside the Teenage Mind

Teenagers think differently to adults. They are more likely to take risks, be sleepy, misread emotions, give in to peer-pressure and lack self-control. They commonly also go through adolescent egocentrism. The Voice Inside the Teenage Mind project explored this notion with the teenagers aged between thirteen and fourteen years of age from St. Nicholas College Dingli Secondary School, through the facilitation of two creatives: the school guidance/biology teacher and a Programme Development



Executive from Esplora. The targeted number of participating students was sixty: thirty students were chosen through a call to form part of the Performance Development Group as part of the Mid-Day Break Club and thirty students from the Art and Design and Technology groups worked on set design.

Through a combination of Science (psychology) and the Creative Arts, this project improved understanding of self-awareness and mental health among teenagers and also helped students develop cognitive abilities that complement study in other disciplines. Furthermore, it built confidence which benefits public speaking opportunities. This project was successfully awarded Euro 5000 through the Kreattiv funding programme.

Il-Gawgaw: Panto in the Dark

Panto in the Dark was a collaboration between Teatru Malta and Esplora with the aim of providing an authentic pantomime experience for persons with visual impairment. Minority groups are often ignored in theatrical experiences so this project aimed to



offer an excellent, innovative experience for all. The project was mainly funded by Teatru Malta and the Il-Premju tal-President għall-Kreattività through which Esplora and Teatru Malta successfully obtained Euro 8000 towards an investment in binaural technology headphones. Esplora provided the venue in-kind, as well as staff services for the dates of the performances.

Panto in the Dark reached out to communities which are vulnerable, especially those with a visual impairment. Esplora was the ideal location for the project given its accessibility. Furthermore, this project helped reach Esplora's target in marrying Art with Science by means of the use of specific technology. Since the project involved theatre in the dark, there was no need for visual effects which are typically found in pantomime productions, as the production focused on a full auditory experience, by means of binaural technology headphones.

u19 Project

The u19 Project was a result of a collaboration between the 2017 Maltese Presidency of the Council of the EU, ARS Electronica and Esplora. In 2017, this project involved the delivery of workshops by artists and experts in the fields of Art and Technology and works using Ableton Live, Arduinos, Little Bits, animation applications and coding practices to children and youths under the age of 19, were created.

The legacy of this project was an extended agreement between the collaborators to create a local version of the Under 19 competition for young Maltese creatives for the first time. Create Your World is the yearly theme and motto of this creative competition that is open to youths aged nineteen and under, whose work may take any shape: from digital art to mechanics, technology, music, a social project or even an innovative futuristic idea about the world we live in. Information sessions invited youths to learn more about the unique categories and prizes of the competition's local edition.

The local winners were the guests of honour at a special prize-giving ceremony in Malta who then flew to Linz for the Ars Electronica Festival in September 2018. The local winners' work was also hosted in a special exhibition at Esplora in November 2018.

Esplora sponsored the Esplora u10 prize and the Esplora u14 prize, (a total of Euro 600 in value). The Create Your World competition's focus on Technology, Science, Art and Culture challenged local youths to explore STEAM and offered the winners international exposure.



EsploraNatura

With a growing appreciation of Malta's unique natural heritage and the need to preserve it, MCST is developing a new Natural History Discovery centre, EsploraNatura, to be situated in an existing building adjacent to Esplora. EsploraNatura will be different from Esplora in that it will have a collection at its heart as it is to become the home of the natural history collection currently based in the Malta Museum of Natural History (Vilhena Palace, Mdina). EsploraNatura will have the character of a museum which collects, conserves and displays artefacts, albeit doing so in a manner which befits modern forms of interpretation and display. The ambition is of developing a world class visitor attraction focussing on the presentation and interpretation of natural history and of further developing the cultural hub for science engagement that the Villa Bighi site has become.

A number of drivers have been identified for the development of EsploraNatura, including the national drive to encourage greater take up of STEM (science, technology, engineering and mathematics) subjects by Maltese students and to develop Malta's knowledge economy. Apart from that EsploraNatura will complement the lack of coverage of certain STEM subjects, in particular biological sciences, across Esplora's existing activities.

The main objectives of the project are to rehouse the current natural history collection and archives in a more suitable environment and location, enabling the reinterpretation of the collection to create a broader, more engaging and more contemporary visitor experience. The project will further entail the expansion of Esplora's overall activity and brand by broadening the content to include natural history, to expand the range of audiences that Esplora reaches out to (including teenagers and local residents of Kalkara), to continue building a cultural hub in Kalkara that supports learning and contributes to the regeneration of the area and to make the Villa Bighi site one of the primary destinations in Malta by offering a variety of different experiences. The project will further entail the restoration of historical buildings, which in itself has cultural value, as well as recreational and touristic impacts.

In view of MCST's commitment to this project, the Director of EsploraNatura was employed at the

end of 2018 with a forecast of employing further personnel specialised in science communication, exhibition development and natural history collections in the years to come. The role of this team will be to lay the foundations for a world class natural history centre.

EsploraNatura's day-to-day business during 2018 concentrated on planning of the project from inception to opening, including operations for the first years of the centre's life. The team, together with an external consultant KCA London Ltd., an established design, learning and operations consultancy, started investigating the operations and procedures of science centres and natural history museums in Europe in order to plan the EsploraNatura's activities. The future management of EsploraNatura is being analysed and extensive market research is being carried out to be able to determine the operations and activities to be held in EsploraNatura throughout the years to come.

As a result, the EsploraNatura team has started working on the following tasks:

- Began evaluating the most prominent European Interactive Science Centres and Natural History Museums in order to prepare the groundwork for the development of EsploraNatura. The research identified the different approaches taken by these centres and museums in the presentation and interpretation of natural history content.
- Made inquiries and evaluated the potential sources of funding for EsploraNatura.
- Procured services for a strategic planning exercise by external consultants. The first phase of the strategic planning for EsploraNatura was completed by KCA London Ltd. in August 2018. The report detailed the vision, mission and guiding principles for the project and started identifying the overarching themes, key messages and outcomes broken down for each audience group and the experience approach. It provided a top-level site plan, early thematic space planning, high level themed layout, visitor flow and operational considerations. It also included a full site analysis, analysing the potential building

considered for use as the centre, its opportunities for development and integration with the wider site. Alongside this work, an outline commercial analysis was developed by Colliers International.

- Began drawing up a Cost-Benefit Analysis and a Business Plan. The start-up costs to launch and run EsploraNatura and the ensuing operational costs were detailed and resulted in estimated budgets. The initial costs included allowances for the interior design of exhibition spaces, exhibits, IT software and hardware, initial outlay for educational programming such as science shows and workshops, as well as the branding and marketing of the new centre. Post opening expenditure had to be forecast and estimates were reached for the annual costs related to the centre's planned activities and projected operational costs such as staff wages, outreach, stocks for gadget and coffee shops and so forth. This exercise was crucial to draw up a comprehensive procurement list of the expected number of tenders to be published. This included a projected contracting and disbursement schedule detailing when and how the overall EsploraNatura funds will be spent.
- Identified published research in the field of museology, participatory and interactive centres and science communication, in order for the team to acquaint itself with good practice in the fields. The research covers the best methods to build exhibitions for informal learning, changes in attitudes and aptitudes towards science subjects in students who visit science centres, economic impact on the community and the multiplier effect of free style learning in the non-student public. Reference to research has been instrumental in making informed choices in order to build a centre that becomes a well-respected national asset.
- Developed an umbrella of themes to consider developing into exhibitions with the help of KCA London Ltd.. Started choosing types of exhibits to be displayed and became familiar with the more successful typical exhibits found in other museums and centres.
- Began making contacts and networking with other European Natural History Museums and international programmes and associations with the aim of forging relationships with existing and new natural history museums in Europe as preparation for future partnerships.
- Procured the services of a consulting architect to prepare the preliminary architectural drawings and together with the team started to earmark the function of each of the areas. Listed the necessary spaces for exhibits, proper storage for the natural history collection, amenities, car park, restrooms, ticketing, entrance, workshops areas and so forth.

- Held consultations with numerous stakeholders, including local experts, hobbyists, teachers, parents, community groups, tourism specialists, children and many others. This will be followed by open consultations, focus groups and national surveys in 2019.
- Tenders are being drafted to engage a team of architects, designers and interactive centre experts in order to restore, rehabilitate and reconstruct the existing buildings at the Bighi Complex.

The next steps, 2019:

- The following activities will be finalised with the assistance of consultants: the outline project delivery plan and operational plan, setting out how the development of the Museum will be structured, and outlining a top-level programme for the stages of work to completion.
- The development of the museum experience will continue. This will ensure that by the time an architectural team for the design of the centre is appointed, the museum experience and functional requirements have been defined to a level that will shape and inform the architectural design, rather than the architectural design leading and constraining the museum experience and operations.
- With the assistance of the consultants and architects employed, a concrete plan will be devised as to how to restore the building that will house EsploraNatura, including applying for a full development permit for the site.
- The EsploraNatura team will explore links to the science curricula and identify areas which can be interpreted and displayed in the content to compliment the education system. These can be in the form of exhibits, workshops, science shows, learning trails, and other innovative ways of delivery.
- It is planned that several tenders, including the architectural services, works and exhibition content will be drafted and issued in 2019. The Project impact on carbon neutrality will also be addressed. EsploraNatura aims at being a forerunner at adopting an energy efficient and sustainable philosophy as much as possible in order to reduce the energy and resource consumption.
- Drafting of funding applications to include finalised architectural plans, research in the fields of EU and education policy, newly finished operational plans and a complete list of service and supply tenders.

Partners



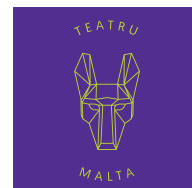
L-Università
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Malta College of Arts, Science & Technology



World Space
Week OCTOBER 4-10







ANNUAL REPORT

and Audited Financial Statements

For the year ended 31 December 2018



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General information

Registration

Malta Council for Science and Technology was set up by the Prime Minister on behalf of the Government of Malta as a Public Foundation. This Foundation was set up and is governed by the rules set out in the Charter of the Foundation.

Council

Chairman:	Dr. Jeffrey Pullicino Orlando
Deputy Chairman:	Mr. Saviour Zammit
Secretary:	Dr. Vincent Micallef
Board Members:	Prof. Angela Xuereb
	Ms. Elizabeth Olivieri
	Ms. Desiree Scicluna Bugeja
	Ms. Lara Maria Mangani
	Mr. Karl Herrera
	Prof. Emmanuel Sinagra
	Dr. Karen Muglett
	Mr. David Degabriele
	Prof. Janet Mifsud
	Dr. Ivan Gatt
	Mr. Vincent Maione
	Dr. Kristian Zarb Adami
	Mr. Karl Azzopardi
	Mr. Kevin Schembri

Except for the Chairman, the above Council Members resigned prior to the General Election held on 3 June 2017. The Board has not been reconstituted until the date of the audit report.

Registered office

Malta Council for Science and Technology
"Villa Bighi"
Kalkara
Malta

Auditors

Busuttil & Micallef
Nr. 11, "L-Ufficji"
Misrah 28 ta' Frar 1883
Birkirkara BKR 1501
Malta

Chairman's Report

The Chairman presents his report and the audited financial statements of the Malta Council for Science and Technology for the year ended 31 December 2018.

Principal Activities

The Malta Council for Science and Technology (hereafter referred to as the Foundation), is responsible for the development of science and technology in Malta.

Performance review

The level of business and the Foundation's financial position are in line with expectations, and the Council expects that the present level of activity will improve in the foreseeable future.

Auditors

Busuttil & Micallef have intimated their willingness to continue in office. A proposal to reappoint Busuttil & Micallef as auditors of the Foundation will be put to the forthcoming Council meeting at which these financial statements are approved and authorised for issue.

By order of the Council



Dr. Jeffrey Pullicino Orlando
Chairman

Malta Council for Science and Technology
"Villa Bighi"
Kalkara
Malta

30 September 2019

Chairman's Responsibilities

The Council is required by the Charter Document of the Foundation to prepare financial statements for each financial period which give a true and fair view of the state of the affairs of the Foundation and of the surplus or deficit of the Foundation for that period. In preparing these, the Council Members are required to:

- adopt the going concern basis unless it is inappropriate to presume that the Foundation will continue in the business;
- select suitable accounting policies and apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- account for income and charges relating to the accounting period on the accruals basis;
- value separately the components of asset and liability items; and
- report comparative figures corresponding to those of the preceding accounting period.

The Council Members are responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the Foundation and to enable them to ensure that the financial statements comply with the Charter Document of the Foundation. They are also responsible for safeguarding the assets of the Foundation and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Independent Auditor's Report

To the Council Members of the Foundation

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the Foundation, set out on pages 7 to 24, which comprise the balance sheet as at 31 December 2018, and the income statement, statement of changes in equity and cash flow statement for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements give a true and fair view of the balance sheet of the Foundation as at 31 December 2018, and of its financial performance and its cash flows for the year then ended in accordance with the Accountancy Profession (General Accounting Principles for Small and Medium-sized Entities) Regulations, 2015 and the Schedule accompanying and forming an integral part of those Regulations (GAPSME).

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Foundation in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) together with the ethical requirements that are relevant to our audit of the financial statements in accordance with the Accountancy Profession (Code of Ethics for Warrant Holders) Directive issued in terms of the Accountancy Profession Act (Cap. 281) in Malta, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

The Council Members are responsible for the other information. The other information comprises the Chairman's report. Our opinion on the financial statements does not cover this information. In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. Based on the work we have performed, in our opinion:

- the information given in the Chairman's report for the financial year for which the financial statements are prepared is consistent with the financial statements;

In addition, in light of the knowledge and understanding of the Foundation and its environment obtained in the course of the audit, we are required to report if we have identified material misstatements in the Chairman's report. We have nothing to report in this regard.

Independent Auditor's Report - continued

Responsibilities of the Council

The Council is responsible for the preparation of the financial statements that give a true and fair view in accordance with GAPSME, and for such internal control as the Council is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Council is responsible for assessing the Foundation ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Council either intends to liquidate the Foundation or to cease operations, or has no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Foundation's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Council.
- Conclude on the appropriateness of the Council's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Foundation ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Foundation to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Independent Auditor's Report - continued

Auditor's Responsibilities for the Audit of the Financial Statements - continued

We communicate with the Council regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.



David Busuttil
Partner

For and on behalf of
Busuttil & Micallef
Certified Public Accountants

Nr. 11, "L-Ufficcji"
Misrah 28 ta' Frar 1883
Birkirkara
BKR1501
Malta

30 September 2019

Income Statement

		Year ended 31 December	
	Notes	2018 €	2017 €
Revenue – Projects	3	2,763,792	2,721,713
Revenue – Operational subventions	3	3,840,000	2,600,000
Revenue – Esplora Interactive Science Centre	3	326,716	438,322
Direct expenditure - projects		(2,748,374)	(2,623,919)
Gross surplus		4,182,134	3,136,116
Other income	4	1,519,108	1,357,522
Administrative expenses		(5,565,050)	(4,961,587)
Operating surplus/(deficit)		136,192	(467,949)
Investment income	5	1,268	772
Surplus/(deficit) for the year		137,460	(467,177)

Balance Sheet

		As at 31 December	
	Notes	2018 €	2017 €
ASSETS			
Non-current assets			
Intangible assets	8	747,491	662,041
Property, plant and equipment	9	17,125,633	17,790,495
Investment in subsidiary	10	1,500	1,500
		<u>17,874,624</u>	<u>18,454,036</u>
Current assets			
Trade and other receivables	11	638,503	520,550
Cash and cash equivalents	12	4,808,501	3,254,669
		<u>5,447,004</u>	<u>3,775,219</u>
Total assets		23,321,628	22,229,255

Balance Sheet - continued

	Notes	As at 31 December	
		2018 €	2017 €
EQUITY AND LIABILITIES			
Equity			
Accumulated losses	13	(153,021)	(290,481)
LIABILITIES			
Non-current liabilities			
Trade and other payables	14	19,935,154	19,806,820
Current liabilities			
Trade and other payables	14	3,539,495	2,712,916
		23,474,649	22,519,736
Total equity and liabilities		23,321,628	22,229,255

The financial statements set out on pages 7 to 24 were approved, authorised for issue and signed by the Council on 30 September 2019.



Dr. Jeffrey Pullicino Orlando
Chairman

Statement of Changes in Equity

	Retained earnings €	Total €
At 1 January 2017	176,696	176,696
Deficit for the year	(467,177)	(467,177)
At 31 December 2017	(290,481)	(290,481)
At 1 January 2018	(290,481)	(290,481)
Surplus for the year	137,460	137,460
At 31 December 2018	(153,021)	(153,021)

Cash Flow Statement

	Notes	Year ended 31 December	
		2018 €	2017 €
Cash flows from operating activities			
Operating surplus/(deficit)		136,192	(467,949)
Adjustment for:			
Depreciation and amortisation charge		1,407,707	1,346,941
		1,543,599	878,992
Change in trade and other receivables		9,889	(58,441)
Change in trade and other payables		826,579	1,150,194
		2,380,367	1,970,745
Cash generated from operations		1,268	772
Net cash generated from operating activities		2,381,635	1,971,517
Cash flows used in investing activities			
Acquisition of property, plant and equipment		(656,665)	(804,681)
Acquisition of intangible assets		(171,630)	-
Advances to subsidiary		(127,842)	(21,797)
Net cash used in investing activities		(956,137)	(826,478)
Cash flows generated from financing activities			
Contribution from government grants		128,334	37,391
Net increase/(decrease) in cash and cash equivalents		1,553,832	1,182,430
Cash and cash equivalents at beginning of year		3,254,669	2,072,239
Cash and cash equivalents at end of year	12	4,808,501	3,254,669

Notes to the Financial Statements

1 Basis of preparation

1.1 Basis of measurement and statement of compliance

The financial statements of the Foundation have been prepared in accordance with the Accountancy Profession (General Accounting Principles for Small and Medium-Sized Entities) Regulations, 2015 and the Schedule accompanying and forming an integral part of those Regulations ("GAPSME"). The financial statements have been prepared on the historical cost basis.

1.2 Functional and presentation currency

The financial statements are presented in Euro, which is the Foundation's functional currency.

2 Significant accounting policies

2.1 Property, plant and equipment

Recognition and measurement

The cost of an item of property, plant and equipment is recognised as an asset when it is probable that the future economic benefits that are associated with the asset will flow to the entity and the cost can be measured reliably. Property, plant and equipment are initially measured at cost comprising the purchase price, any costs directly attributable to bringing the assets to a working condition for their intended use, and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located. Subsequent expenditure is capitalised as part of the cost of property, plant and equipment only if it enhances the economic benefits of an asset in excess of the previously assessed standard of performance, or it replaces or restores a component that has been separately depreciated over its useful life.

After initial recognition, property, plant and equipment are carried under the cost model, that is at cost less any accumulated depreciation and any accumulated impairment losses.

2 Significant accounting policies - continued

2.1 Property, plant and equipment - continued

Depreciation

Depreciation is calculated to write down the carrying amount of the asset on a systematic basis over its expected useful life. Depreciation of an asset begins when it is available for use and ceases at the earlier of the date that the asset is classified as held for sale (or included in a disposal group that is classified as held for sale) or the date that the asset is derecognised. The depreciation charge for each period is recognised in profit or loss.

The rates of depreciation used for other items of property, plant and equipment are the following:

• Improvements to buildings	-	10%
• National interactive science centre	-	2 to 33.33%
• Office equipment	-	10%
• Soft furnishings	-	10%
• Technical equipment	-	20%
• Furniture, fixtures and fittings	-	10%
• Motor vehicles	-	20%
• Computer hardware and software	-	33.33%

Depreciation method, useful life and residual value

The depreciation method applied, the residual value and the useful life are reviewed on a regular basis and when necessary, revised with the effect of any changes in estimate being accounted for prospectively.

2.2 Intangible assets

Internally generated intangible assets – research and development costs

An internally-generated intangible asset, arising from the company's development of Explora Interactive Science Centre, is recognised only if all of the following can be demonstrated by the company:

- The technical feasibility, the availability of resources and the intention and ability of completing the asset so that it will be available for use or sale;
- How the asset will generate probable future economic benefits; and
- The ability to measure reliably the expenditure attributable to the asset during its development.

2 Significant accounting policies - continued

2.2 Intangible assets – continued

Internally generated intangible assets are initially measured at cost, being the sum of the expenditure incurred from the date when the recognition criteria are met.

After initial recognition, internally-generated intangible assets are carried at cost less any accumulated amortisation and impairment losses. When the intangible asset becomes available for use, it is amortised on a straight-line basis over its estimated useful life which is assumed to be 10 years.

Amortisation method, useful life and residual value

The amortisation method applied, the residual value and the useful life are reviewed on a regular basis and when necessary, revised with the effect of any changes in estimate being accounted for prospectively.

Derecognition of intangible assets

Intangible assets are derecognised on disposal or when no future economic benefits are expected from their use or disposal. Gains and losses arising from derecognition represent the difference between the net proceeds (if any) and the carrying amount and are included in profit or loss in the period of derecognition.

2.3 Investment in subsidiary

A subsidiary is an entity which is controlled by the Foundation. Control is the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities.

An investment in a subsidiary is initially measured at cost. After initial recognition, the investment in subsidiary is measured using the cost method.

Under the cost method, the investment is measured at cost less any accumulated impairment losses. Distributions received from the subsidiary are recognised as investment income in profit or loss when the Foundation's right to receive the dividend is established.

2.4 Financial assets, financial liabilities and equity

A financial asset or a financial liability is recognised on the Foundation's balance sheet when the Foundation becomes a party to the contractual provisions of the instrument.

Financial assets and financial liabilities are initially recognised at their fair value plus in the case of financial assets and financial liabilities not classified as held for trading and subsequently measured at fair value, transaction costs attributable to the acquisition or issue of the financial assets and financial liabilities.

2 Significant accounting policies - continued

2.4 Financial assets, financial liabilities and equity – continued

Financial assets and financial liabilities are derecognised if and to the extent that, it is no longer probable that any future economic benefits associated with the item will flow to or from the entity.

An equity instrument is any contract that evidences a residual interest in the assets of the Foundation after deducting all of its liabilities. Equity instruments are recorded at the proceeds received, net of direct issue costs.

A financial instrument, or its component parts, is classified as a financial liability, financial asset or an equity instrument in accordance with the substance of the contractual arrangement rather than its legal form.

Trade and other receivables

Trade and other receivables are carried at cost less any impairment losses (refer to accounting policy 2.5).

Trade and other payables

Trade and other payables are stated at their nominal value.

2.5 Impairment

The Foundation's property, plant and equipment, intangible assets, investment in subsidiary and financial assets tested for impairment.

i. Property, plant and equipment, intangible asset and investment in subsidiary

The carrying amounts of the Foundation property, plant and equipment, intangible assets and investment in subsidiaries are reviewed at each balance sheet date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amount is estimated. The recoverable amount of an asset is the higher of its fair value less costs to sell and its value in use.

Whenever the carrying amount of an asset exceeds its recoverable amount, an impairment loss is recognised and the carrying amount of the asset is reduced to its recoverable amount. Impairment losses are recognised immediately in profit or loss, unless they relate to an asset which is carried at revalued amount, in which case they are treated as a revaluation decrease to the extent that the impairment loss does not exceed the amount in the revaluation surplus for that asset.

2 Significant accounting policies - continued

2.5 Impairment - continued

The carrying amounts of the Foundation assets are also reviewed at each balance sheet date to determine whether there is any indication that an impairment loss recognised in prior periods may no longer exist or may have decreased. If any such indication exists, the asset's recoverable amount is estimated. An impairment loss previously recognised is reversed only if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. When an impairment loss subsequently reverses, the carrying amount of the asset is increased to the revised estimate of its recoverable amount, to the extent that it does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior years. Impairment reversals are recognised immediately in profit or loss, unless they relate to an asset which is carried at revalued amount, in which case they are treated as a revaluation increase unless an impairment loss on the same asset was previously recognised in profit or loss.

ii Financial assets

A financial asset or a group of financial assets is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or group of financial assets that can be reliably estimated.

If there is objective evidence that an impairment loss on financial assets carried at amortised cost or cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The amount of the loss is recognised in profit or loss. If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed. The reversal does not result in a carrying amount of the financial asset that exceeds what the amortised cost/cost would have been had the impairment not been recognised at the date the impairment is reversed. The amount of the reversal is recognised in profit or loss.

2.6 Cash and cash equivalents

Cash comprises cash on hand and demand deposits. Cash equivalents are short-term investments that are held to meet short-term cash commitments rather than for investment or other purposes.

2.7 Income

Project income

Project income is recognised when there is reasonable assurance that all the conditions attaching to it are complied with and the grants will be received. Any grants relating to future periods are recognised as deferred income. Project income is recognised in income and expenditure so as to match it with the cost towards which it is intended to contribute.

Government grants

Government grants are recognised when there is reasonable assurance that all the conditions attaching to them are complied with and the grant will be received. Any grants relating to future periods are recognised as deferred income. Government grants are recognised in income and expenditure so as to match them with the cost towards which they are intended to contribute. Such grants are presented in Other income in the income and expenditure account.

Interest income

Interest income is recognised when the inflow of economic benefits associated with the transaction is probable and the amount of income can be measured reliably. Interest income is accrued on a time proportion basis.

Rental income

Rental income is recognised when the inflow of economic benefits associated with the transaction is probable and the amount of income can be measured reliably. Rental income is recognised in profit or loss on a straight line basis over the lease term.

3 Revenue

Revenue is analysed as follows:

	2018 €	2017 €
Project income	2,763,792	2,721,713
Operational subventions	3,840,000	2,600,000
Explora Interactive Science Centre income	326,716	438,322
	6,930,508	5,760,035

4 Other income

	2018 €	2017 €
Grant income	1,232,319	1,192,610
Other income	59,868	43,342
Agency income	75,921	121,570
Management fees	151,000	-
	<u>1,519,108</u>	<u>1,357,522</u>

5 Investment income

Investment income is analysed as follows:

	2018 €	2017 €
Interest income on cash and cash equivalents	<u>1,268</u>	<u>772</u>

6 Operating deficit

6.1 Operating deficit is stated after charging the following:

	2018 €	2017 €
Depreciation and amortisation expenses	<u>1,407,707</u>	<u>1,348,539</u>

6.2 Total remuneration paid to the Foundation's auditors during the year amounts to:

	2018 €	2017 €
Audit fees	<u>3,500</u>	<u>3,500</u>

6 Operating deficit – continued

6.3 Staff costs incurred during the year are analysed as follows:

	2018 €	2017 €
Wages and salaries	2,723,692	2,373,767
Social security costs	208,795	174,027
Council Members' emoluments	-	4,960
	<u>2,932,487</u>	<u>2,552,754</u>

6.4 The average number of persons employed by the Foundation during the year were as follows:

	2018 No.	2017 No.
Management and administration	<u>147</u>	<u>114</u>

7 Income taxes

No provision for Malta income tax has been made in these financial statements as the Foundation is exempt from Malta income tax.

8 Intangible assets

	Esplora natura €	Pre-trading expenses €	Total €
1 January 2018			
Cost	-	775,617	775,617
Accumulated amortisation	-	(113,576)	(113,576)
Net book amount	-	662,041	662,041
Movement for the year ended 31 December 2018			
Opening net book amount	-	662,041	662,041
Additions	171,630	-	171,630
Amortisation charge	-	(86,180)	(86,180)
Closing net book amount	171,630	575,861	747,481
At 31 December 2018			
Cost	171,630	775,617	947,247
Accumulated amortisation	-	(199,756)	(199,756)
Net book amount	171,630	575,861	747,491

9 Property, plant and equipment

	Improvement to buildings	National Interactive Science Centre	Office equipment	Soft Furnishings	Technical equipment	Furniture, fixtures and fittings	Motor vehicles	Computer hardware and software	Total
	€	€	€	€	€	€	€	€	€
1 January 2018									
Cost	314,729	19,006,860	50,072	26,833	87,561	271,523	8,852	395,664	20,162,094
Accumulated depreciation	(289,088)	(1,382,366)	(47,907)	(20,877)	(87,561)	(203,306)	(8,852)	(331,642)	(2,371,599)
Net book amount	25,641	17,624,494	2,165	5,956	-	68,217	-	64,022	17,790,495
Movement for the year ended 31 December 2018									
Opening net book amount	25,641	17,624,494	2,165	5,956	-	68,217	-	64,022	17,790,495
Additions	44,172	515,997	3,195	7,566	-	29,539	-	56,196	656,665
Depreciation charge	(8,945)	(1,232,319)	(752)	(1,572)	-	(18,325)	-	(59,614)	(1,321,527)
Closing net book amount	60,868	16,908,172	4,608	11,950	-	79,431	-	60,604	17,125,633
At 31 December 2018									
Cost	358,901	19,522,857	53,267	34,399	87,561	301,062	8,852	451,860	20,818,759
Accumulated depreciation	(298,033)	(2,614,685)	(48,659)	(22,449)	(87,561)	(221,631)	(8,852)	(391,256)	(3,693,126)
Net book amount	60,868	16,908,172	4,608	11,950	-	79,431	-	60,604	17,125,633

10 Investment in subsidiary

	2018 €	2017 €
Movements for the year ended 31 December		
Closing net book amount	1,500	1,500
At 31 December		
Cost/Net book amount	1,500	1,500

Name of company	Registered office	2018 %	2017 %
Engage Science Limited	MCST, Villa Bighi Marina Street Kalkara	100	100

11 Trade and other receivables

	2018 €	2017 €
Trade receivables	46,712	93,350
Prepayments	22,871	21,892
Accrued income	126,996	156,542
Indirect taxation	268,894	203,577
Amount due from subsidiary (Note)	173,030	45,189
	638,503	520,550

Note:

Amount due from subsidiary is unsecured, interest free and repayable on demand.

12 Cash and cash equivalents

Cash and cash equivalents included in the cash flow statement comprise the following balance sheet amounts:

	2018 €	2017 €
Cash at bank and in hand	<u>4,808,501</u>	<u>3,254,669</u>

13 Accumulated losses

Accumulated losses represent accumulated surpluses and deficits.

14 Trade and other payables

14.1 Non-current liabilities

	2018 €	2017 €
Government grants	<u>19,935,154</u>	<u>19,806,820</u>

In accordance with the Foundation's accounting policies relating to grants received for the purchase of tangible non-current assets, grants are included with non-current liabilities and are credited to the income statement when the asset is available for use, on a straight-line basis over the expected useful lives of the related costs. The balance at end of year refers to grants granted by the Government of Malta to the Foundation for the design and construction of the Esplora Interactive Science Centre.

14.2 Current liabilities

	2018 €	2017 €
Trade payables	164,356	347,263
Accruals	1,194,817	606,274
Deferred income	2,133,544	1,730,364
Other payables	46,778	29,015
	<u>3,539,495</u>	<u>2,712,916</u>

15 Contingent liabilities

At 31 December 2018, bank guarantees amounting to €5,370 (2017: €4,660) were given by the Foundation during the normal course of operational activity in favour of third parties over which no loss is expected to arise.

Design Solutions Limited have initiated legal proceedings against the Foundation, claiming that the Explora Interactive Science Centre contract be awarded to them. The Foundation has requested a retrial which is currently being heard. The Foundation's lawyers are unable to quantify any potential contingency arising from the said case due to the nature of the claims.

17 Related party transactions

The Malta Council for Science and Technology is a public Foundation funded by the Government of Malta. Transactions with the Government of Malta during the year arose as shown hereunder:

	2018 €	2017 €
<i>Revenue:</i>	2,763,792	2,721,713
Projects operational subvention	3,840,000	2,600,000
	6,603,792	5,321,713

Salaries payable to the Council Members have been disclosed separately in Note 6.

	2018 €	2017 €
Amounts due from subsidiary		
Opening balance	45,189	23,392
Movements for the year	127,841	21,797
	173,030	45,189

18 Comparative information

Certain comparative information has been reclassified to conform with the current year's disclosure for the purpose of fairer presentation.

19 Statutory information

The Malta Council for Science and Technology acting for and on behalf of the Foundation for Science and Technology is established by a public deed as a Foundation by the Government of Malta.

MALTA COUNCIL FOR SCIENCE AND TECHNOLOGY
Detailed Results - 31 December 2018

Project income

	2018 €	2017 €
FP programmes	56,567	220,209
RTDI programmes	1,715,273	1,401,697
ENIAC programmes	63,261	913,366
Other programmes	928,696	186,441
Total project income	2,763,797	2,721,713

Project expenses

	2018 €	2018 €
FP programmes	137,094	293,215
RTDI programmes	1,715,273	1,401,697
ENIAC programmes	63,261	913,366
Other programmes	832,746	15,641
Total project expenses	2,748,374	2,623,919

MALTA COUNCIL FOR SCIENCE AND TECHNOLOGY
Detailed Results - 31 December 2018

Administrative expenses

	2018 €	2017 €
Advertising and promotions	132,010	88,708
Amortisation charge	86,180	97,351
Audit fees	3,500	3,500
Bank charges	13,894	3,814
Catering events and hospitality	92,561	46,040
Cleaning	132,987	146,570
Computer and IT expenses	38,026	27,703
Depreciation	1,321,527	1,251,188
Equipment hire	10,532	4,278
General expenses	6,745	6,752
Insurance	33,015	28,199
Internationalisation	60,000	58,444
Legal and professional fees	152,649	9,412
Motor car expenses	7,581	4,612
Printing, postage and stationery	48,755	65,080
Provision for bad debts	117	-
Repairs and maintenance	66,795	73,501
Security	69,272	70,445
Staff training	29,429	52,490
Staff uniforms	4,958	14,996
Staff welfare	40,213	29,911
Subscriptions and memberships	31,058	32,994
Telecommunications	30,890	29,572
Travelling and entertainment	110,284	143,937
Wages and salaries	2,932,487	2,552,754
Water and electricity	109,585	119,336
Total administrative expenses	5,565,050	4,961,587

MALTA COUNCIL FOR SCIENCE AND TECHNOLOGY
Detailed Results - 31 December 2018

Other income

	2018 €	2017 €
Grant income	1,232,319	1,192,610
Other income	59,868	43,342
Agency income	75,921	121,570
Management fees	151,000	-
	<u>1,519,108</u>	<u>1,357,522</u>

Investment income

	2018 €	2017 €
Interest income on cash and cash equivalents	<u>1,268</u>	<u>772</u>