

DELIVERABLE 2.4

Industrial partners identified with interest and need of Quantum Technologies in space

<i>COST Action:</i>	CA15220
<i>Project acronym:</i>	QTSpace
<i>Project title:</i>	Quantum Technologies in Space
<i>Funding scheme:</i>	COST Association
<i>Start date of project:</i>	20 October 2016
<i>End date of project:</i>	19 April 2021
<i>Due date of the Deliverable:</i>	October 2020
<i>Deliverable issued:</i>	April 2021 (extension granted)
<i>Dissemination Level:</i>	Public
<i>Version:</i>	1.0

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INTRODUCTION

Effective industry–academia partnership is crucial to the advancement of the science and engineering of deployable technologies that ultimately contribute to our wellbeing and security. For many companies, universities and research institutions have become essential partners while for many universities, companies have become reliable and steady partners to help go through the innovation pathway. Collaborations between companies and universities are critical drivers of the innovation economy.

QTSpace has involved the industry in the Action to maximize the impact and create positive synergies between the public and the private sector.

This intention is clear in the Memorandum of Understanding as follows:

- *Research Coordination Objectives* (page 7): “Identify and coordinate technology-development or mission-proposal opportunities, communication with **industry** and space agencies.”
- *Capacity-building Objectives* (page 7): “Sharing relevant contacts to **industry**, funding agencies and national agencies.”
- *Socioeconomic impact of the Action* (page 11): “QTSpace will implement and develop new links between academia and space **industry** of high economic value. Even partial achievement of the declared goals of this Action would be sufficient to have substantive socioeconomical repercussions at the European level, de facto igniting the development of new technological products (transducers, sensors, clocks) and thus resonating with the EU job market.”
- *Measures to maximize the impact* (page 12): “For **industrial partners**. i. Reports: Technical reports about QTSpace and its development. ii. Visits: Invitations to visit groups and labs, and to group meetings. iii: Outreach activities: Talks to people in charge of industry R&D. Activities will be carried out both during and after the end of the Action. Moreover, industry stakeholders will be invited to participate in scientific meetings and workshops organized in the course of QTSpace.. iv. Activities in QTSpace may lead to collaborations with industry partners in national and international projects.”
- *Policy on industrial dimension* (page 19): “QTSpace will naturally involve space **industries**, to develop the readiness level of technology needed for future applications in space or for space mission. The Action will create a platform for fruitful collaborations between researchers and industry. WG meetings will be open to representatives of the industry, and will allow researchers and industry to meet and foster mutual understanding. QTSpace will increase the impact of research in the industrial sector, by promoting the use and development of technologies, as well as the exploitation of COST Action results and outcomes through dedicated dissemination and exploitation activities targeting small and medium-sized enterprises (SMEs) and large companies in Europe.”

This deliverable describes how we gather information about companies and institutes that have a stake in Quantum technologies in Space. Companies were approached to collect basic information about their interest and their expertise in Quantum Technologies in Space. Upon permission, such information was made accessible on the QTSpace website.

IMPLEMENTATION

Three different strategies were implemented to collect and present information about companies with interests in Quantum Technologies in Space.

First, people and companies taking part to QTSpace activities were invited to register on the QTSpace website. The full list is available at:

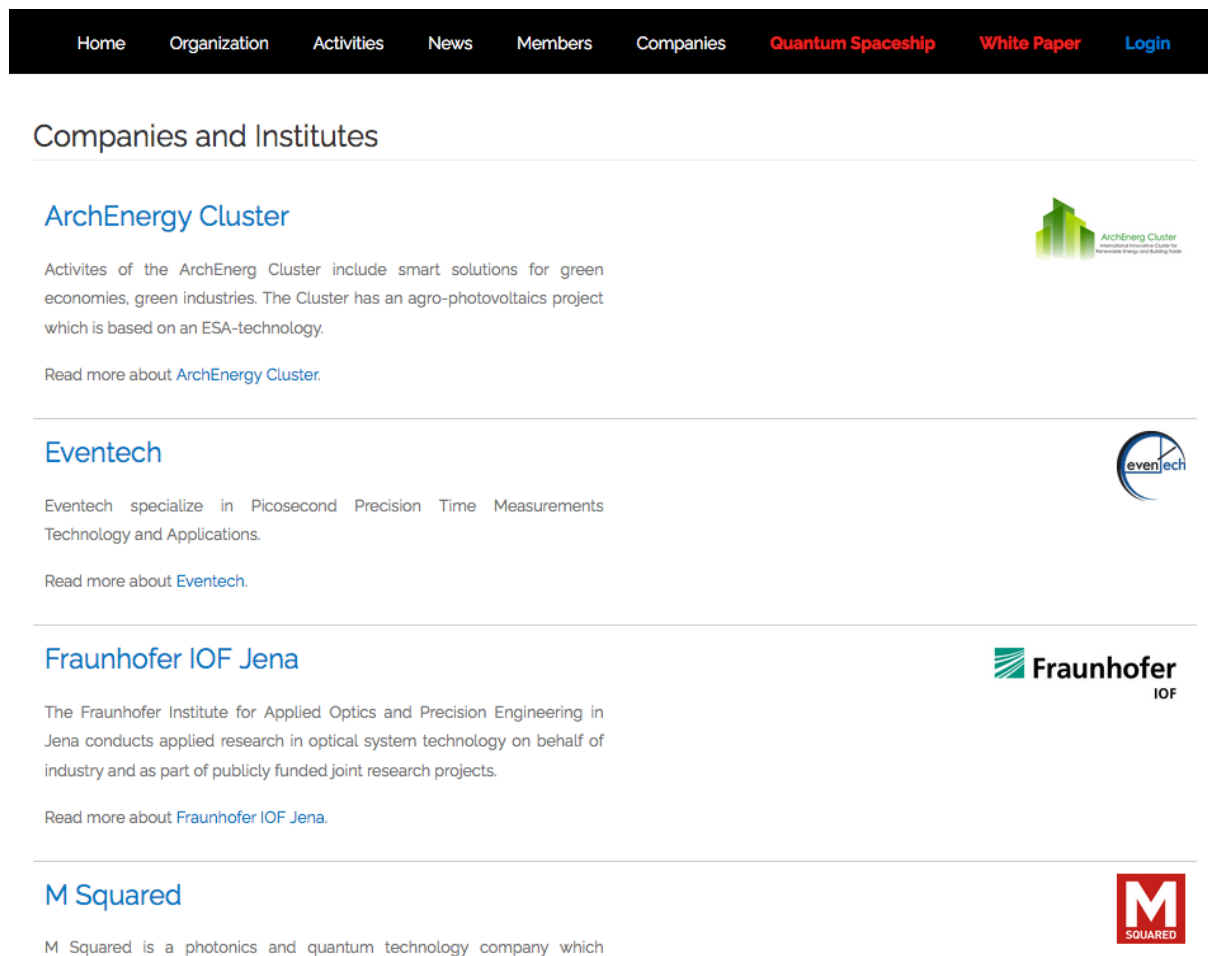
<http://www.qtspace.eu/?q=cost-participants>

Members were regularly informed about activities organized by QTSpace, and also about related news and information.





Second, a part of the QTSpace website dedicated to companies was created:

<http://qtspace.eu/?q=qt-companies-institutes>

containing a short description of their activities connected to Quantum Technologies in Space, and contact details. The logo is displayed, to help identifying the industry.



The screenshot shows a dark navigation bar with the following links: Home, Organization, Activities, News, Members, Companies, Quantum Spaceship, White Paper, and Login. Below the navigation bar, the page title is "Companies and Institutes". The content is organized into four sections, each featuring a company name, a brief description, and a logo:

- ArchEnergy Cluster**: Activities of the ArchEnergy Cluster include smart solutions for green economies, green industries. The Cluster has an agro-photovoltaics project which is based on an ESA-technology. 
- Eventech**: Eventech specialize in Picosecond Precision Time Measurements Technology and Applications. 
- Fraunhofer IOF Jena**: The Fraunhofer Institute for Applied Optics and Precision Engineering in Jena conducts applied research in optical system technology on behalf of industry and as part of publicly funded joint research projects. 
- M Squared**: M Squared is a photonics and quantum technology company which 

This is a snapshot of the QTSpace webpage dedicated to companies

ArchEnergy Cluster

ArchEnergy International Renewable Energy and Building Trade Cluster was established in 2007 with the aim of creating an economic and social model based on renewable energy efficiency that moves green economy enterprises and society towards a more sustainable future. It has steadily held a certificate of Accredited Innovation Cluster title since 2009.

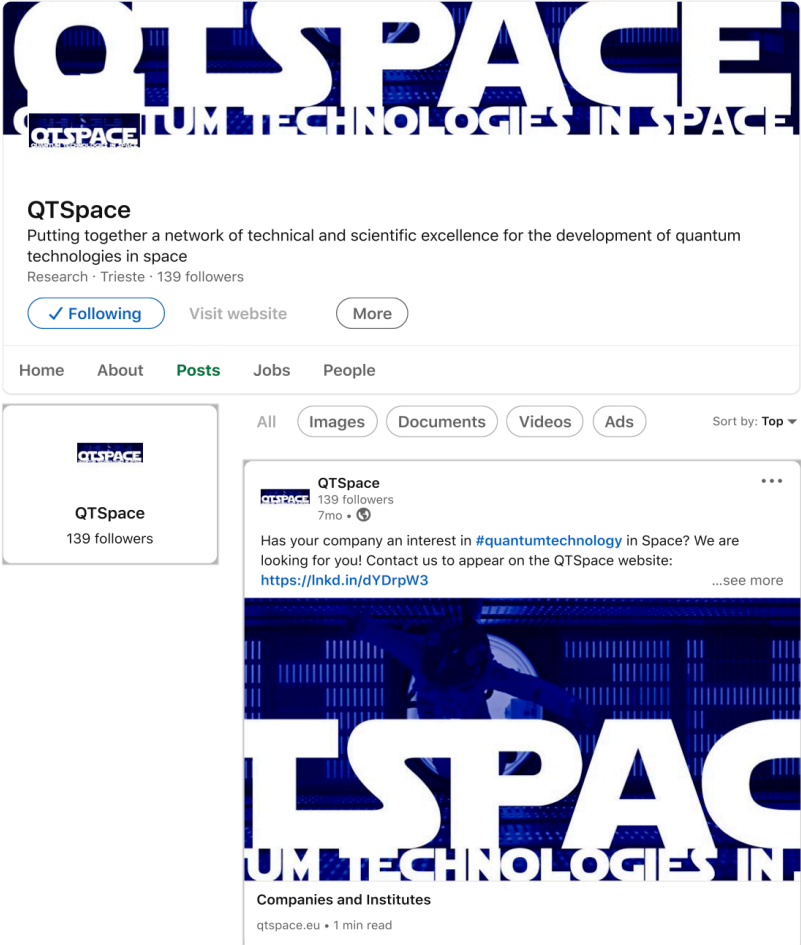
Reference person:

Csaba Benedek
 Clustermanager & Manager of Science
csbenedek@archenerg.eu
 Hungary

This is a snapshot of the kind of information which is available for each company.

Third, a QTSpace LinkedIn was activated, to further connect with industries:

<https://www.linkedin.com/company/qtspace>



Screenshot of the QTSpace LinkedIn page, which advertise the collection of information of companies and institutions with interests lying in quantum technologies in space.

In total, over 50 companies and industries with interests in Quantum Technologies in Space were contacted, with almost 100 people directly receiving our newsletter.

The European industry has prepared a White Paper to support the development of the Quantum Communication Infrastructure (QCI) that would in a first stage secure government and critical infrastructure communication across the European Union, and in a second stage prepare the connection of quantum computers and sensors in a full Quantum Information Network.

The White Paper is advertised on the QTSpace website:

http://www.qtspace.eu/sites/testqtspace.eu/files/other_files/IndustryWhitePaper_V3.pdf

Relevant European companies are also part of the [Quantum Spaceship](#), a new coordinated action to promote QT in Space aimed at the engagement with stakeholders in Europe. In particular, the initiative has the goal to open a collaborative channel with the relevant departments at the European Commission and European Space Agency.

A certain number of companies accepted to be involved in this initiative as follows:

Company	QSN Member - Industry*
Airbus Defence and Space Ltd	Paolo Bianco
OHB-System AG	Bernhard Sang Stephan Seidel Norbert Lemke
Thales Alenia Space	Mathias van den Bossche

CONCLUSIONS

We successfully engaged with European industries with interests in Quantum Technologies in Space. They took part of the QTSpace activities participating in scientific meetings and workshops organized in the course of Action; they joined the most important actions initiated by QTSpace (such as the Quantum Spaceship); they collaborated in the writing of strategic documents.

Information about companies and their contacts are displayed on the QTSpace website.