

# The International Charter Space and Major Disasters NEWSLETTER

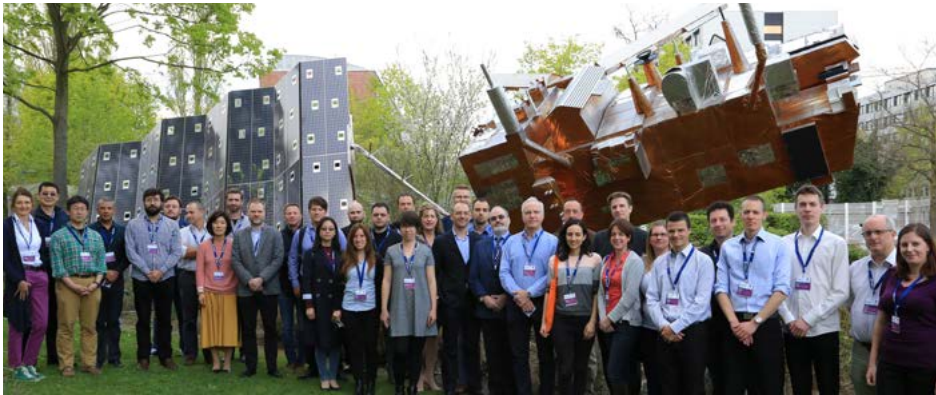
August 2018 | Issue 17



Activations on map



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## Spotlight on Charter PMs

Projects managers from ICube-SERTIT and Geoscience Australia share their experiences of Charter activations.



## UNISPACE+ 50

Members of the Charter attended the UNISPACE+50 Symposium in Vienna in June. The event proved to be a great success.



[Home](#) [About](#) [Activations](#) [News](#) [Library](#)

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## The International Charter Space and Major Disasters

Providing satellite data to those affected by natural or man-made disasters through registered organisations, for use in monitoring and response activities. [Read more](#)

[How the Charter Works](#)

[How to become a user](#)

## New Charter website

Following months of hard work by Charter members and a project team at ESA, a new website was launched in June 2018.

Bringing together new and efficient space technologies to support disaster management

## IN THIS ISSUE

[Spotlight on Charter Project Managers](#)

[UNISPACE+50](#)

[New look Charter Website](#)

[Successful Project Manager Training in Beijing](#)

[Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration](#)

[Charter welcomes new member UAESA](#)



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Activations on map



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## Spotlight on Charter Project Managers

For each Charter activation a Project Manager is selected to coordinate the activation, including the delivery of maps from the value added providers to end users. Project managers from ICube-SERTIT and Geoscience Australia share their experiences.

### *Stephen Clandillon from ICube-SERTIT*

ICube-SERTIT become Charter Project Manager (PM) to back up CNES, a Charter stalwart and our long-term partner. Although an infrequent occurrence, it is vital our personnel know what being a Charter PM entails. It is an important part of being a diverse, experienced rapid mapping provider.

We become Charter PM at the request of the French Space Agency CNES, to provide value-added production to the operational crisis management centre of the French Civil Security, the COGIC, a Charter Authorised User. The PM is backed up by a very experienced 24/7 rapid mapping team.

The most recent instance of an ICube-SERTIT Charter PM at work was in September 2017, during the Hurricane Maria event over Guadeloupe and Martinique, Charter Call 553. Thankfully, there was little damage to dwellings and infrastructure. We produced one map over Grand-Bourg, on the island of Marie-Galante (Guadeloupe). What was remarkable was the rapid access to pertinent Pléiades data, despite cloudy conditions. This was facilitated by CNES pre-emptive programming. Another highlight was the huge effort throughout the Caribbean and the Gulf of Mexico, in mapping the aftermath of both Hurricane Maria and Hurricane Irma. The Charter, Copernicus EMS Rapid Mapping and UNOSAT worked well together in this endeavour.

### *PM Process*

The Charter PM logs on to the Charter Operational System-2 (COS-2), downloads and studies the information already provided on the activation (known as the dossier), looking at the disaster type, the Areas of Interest (AOI), and what kind of data has been ordered. The PM will contact the Authorised User (AU) to give an activation update, and, if necessary, request information on the AOI and the types of damage to be mapped. The PM also ensures the availability and coordination of a value-adding entity (VA), to transform the raw data into crisis geo-information. All relevant information is given to the VA to facilitate the provision of map templates with all the requisite metadata within them, and to prepare reference datasets, roads, placenames, hydrology, contours etc.

To facilitate discussions with the VA the PM derives a satellite resources table on the best data acquisition opportunities and when they will be made. Satellite data availability needs to be monitored and actions taken, because cancellations, programming conflicts, and delivery issues can happen. The PM must also communicate with data providers and the VA to ensure smooth operations.

When data start arriving the PM ensures the distribution, access and quality control of the incoming data, while working with the VA. Not all data is used. When a VA production decision is made the PM informs the AU of the upcoming products, their estimated delivery time, and where and what they will cover. When ready for delivery the PM uploads the products onto COS-2, which publishes the products on to the website. This procedure is very smooth. The whole process can be iterative, if the AU requests further products the whole process starts again. This is especially the case where monitoring is required, or the event moves, for example if a flood moves downstream. A Charter PM's involvement depends on the extent, intensity and type of disaster, but generally lasts less than two weeks, this includes the report writing process.



Stephen Clandillon and Kathryn Owen at PM Training.



Hurricane Maria Impact Map, Marie Galante, Grand Bourg  
Principal imagery Pléiades.

## IN THIS ISSUE

Spotlight on Charter Project Managers ▶

UNISPACE+50 ▶

New look Charter Website ▶

Successful Project Manager Training in Beijing ▶

Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration ▶

Charter welcomes new member UAESA ▶



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*Kathryn Owen, Geoscience Australia PM*

Geoscience Australia activates and manages the Charter on behalf of Emergency Management Australia and the Australian state and territory governments.

Australia experiences a large range of natural hazards, some of which occur simultaneously during our 'summer disaster season' from October to April. During the season it is hot and dry in the southern part of the continent, but wet, with cyclones, in the north. Droughts, bushfires, cyclones and floods are the most common hazards we experience and respond to, but we are also at risk of landslides, tsunamis (from nearby highly active tectonic plate boundaries), a heightened number of earthquakes, as well as manmade hazards.

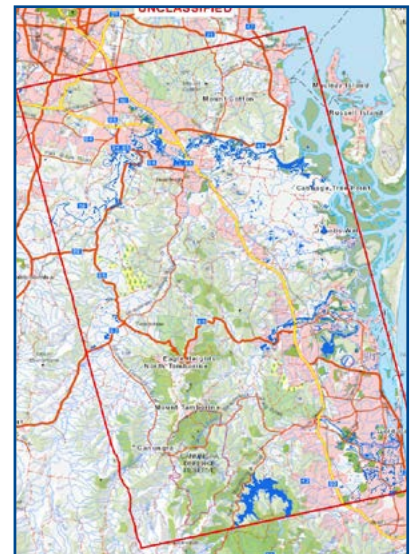
Geoscience Australia has a team of hazards experts that work both to respond to natural hazards and disasters when they occur, as well as helping to model and mitigate their effects on the Australian population, infrastructure and economy. Remote sensing experts are part of this team, they act as Project Manager and, sometimes, Value-Added Provider for Charter activations.

In the 2016–2017 Australian 'disaster season,' Geoscience Australia activated and managed two activations – the South East Australia Floods in September–November 2016 and flooding and wind damage from Tropical Cyclone Debbie in March 2017 (Charter Activation 522).

During both activations Geoscience Australia was a Value-Added Provider. We also activated the Copernicus Emergency Management System as an additional Value-Added Provider. Thankfully, despite some borderline events, we did not need to activate in the 2017–18 season.

As the 2018-19 'disaster season' approaches, we are again preparing. Having participated in the International Charter Space & Major Disasters training earlier this year, and having seen the continued improvements being made to the Charter processes, we are more confident than ever that should we experience a disaster this season, a response including an activation of the Charter will be a smooth and efficient one, with great benefit to the emergency responders, federal, state and territory governments and the Australian public.

Despite the hope that we won't experience a disaster this season, we are grateful for the Charter, its secretariat and its members for the assistance it provides for us to work to ensure the safety of Australia's community.



Area affected by Cyclone Debbie in Gold Coast, April 2017.

*Principal imagery TerraSAR-X*



Flood in Forbes, September 2016. Principal imagery Sentinel-2/Pleiades

## IN THIS ISSUE

Spotlight on Charter Project Managers ▶

UNISPACE+50 ▶

New look Charter Website ▶

Successful Project Manager Training in Beijing ▶

Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration ▶

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## Charter participation at UNISPACE+50 Symposium and Exhibition

Attending the UNISPACE+50 Symposium and Exhibition in Vienna in June 2018, proved to be a great success for the Charter.

Since 1968, the United Nations has held three UNISPACE conferences on the exploration and peaceful uses of outer space. The conference provides a platform for a global dialogue on key issues related to space exploration and exploitation, and the space-based applications that have yielded tremendous scientific, economic and societal benefits.

The International Charter Space and Major Disasters was established as a direct response to one of the recommendations of the UNISPACE III Declaration on Space and Human Development in 1999 – becoming operational in October 2000.

UNISPACE+50, the 4th UNISPACE conference, hosted by UNOOSA (United Nations Office for Outer Space Affairs), was a good opportunity for the Charter to present the highlights and challenges that have been addressed since 2000. There was a dedicated Charter stand at the UNISPACE+50 exhibition and visitors were invited to learn more about the Charter. At the Symposium's plenary session on Space and Civil Society, Charter member Jens Danzeglocke, from DLR, gave an overview of the Charter, focusing on the Universal Access initiative, which allows emergency management authorities from all countries to become Charter Authorized Users after registration and training (see <https://disasterscharter.org/web/guest/how-to-register-as-a-user>).

The Charter presence at the UNISPACE Event was very well received and there were many interesting conversations.



Jens Danzeglocke (DLR) talking to Earth managers of tomorrow

### IN THIS ISSUE

- Spotlight on Charter Project Managers ▶
- UNISPACE+50 ▶
- New look Charter Website ▶
- Successful Project Manager Training in Beijing ▶
- Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration ▶
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## New look Charter Website

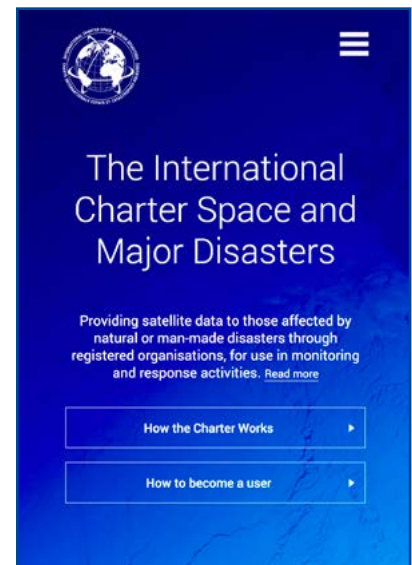
In Summer 2018 the Charter launched a new look website. The new website aims to offer a more user-friendly and attractive presentation of the work of the Charter, making it easier for people to access the information they need.

*The primary goal of the redesign was to present a clear and direct route for visitors to find out how to:*

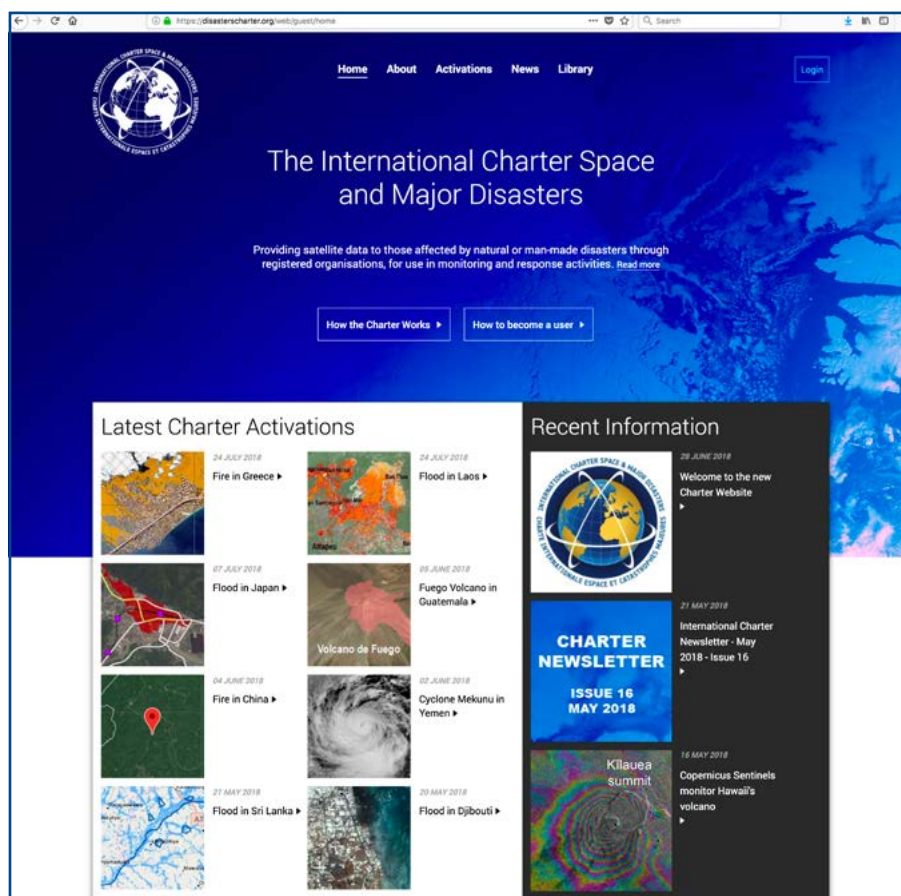
- Become an Authorised User.
- Request data from the Charter in the event of a disaster.
- Find and search activations and products from the past 18 years.

*New and improved features include:*

- A simple homepage, with clear 'call-to-action' button for users to follow.
- Improved filtering, enabling visitors to search for products from particular satellites, disaster types and countries.
- A library of documents.
- Information on the types of disaster the Charter observes and how satellites are used to monitor them.
- Subscription to the newsletter through an easy-to-use form in the footer of the website.



Access the website at  
<https://disasterscharter.org>



Homepage of the new look website

## IN THIS ISSUE

- Spotlight on Charter Project Managers ▶
- UNISPACE+50 ▶
- New look Charter Website ▶
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## Successful Project Manager Training in Beijing

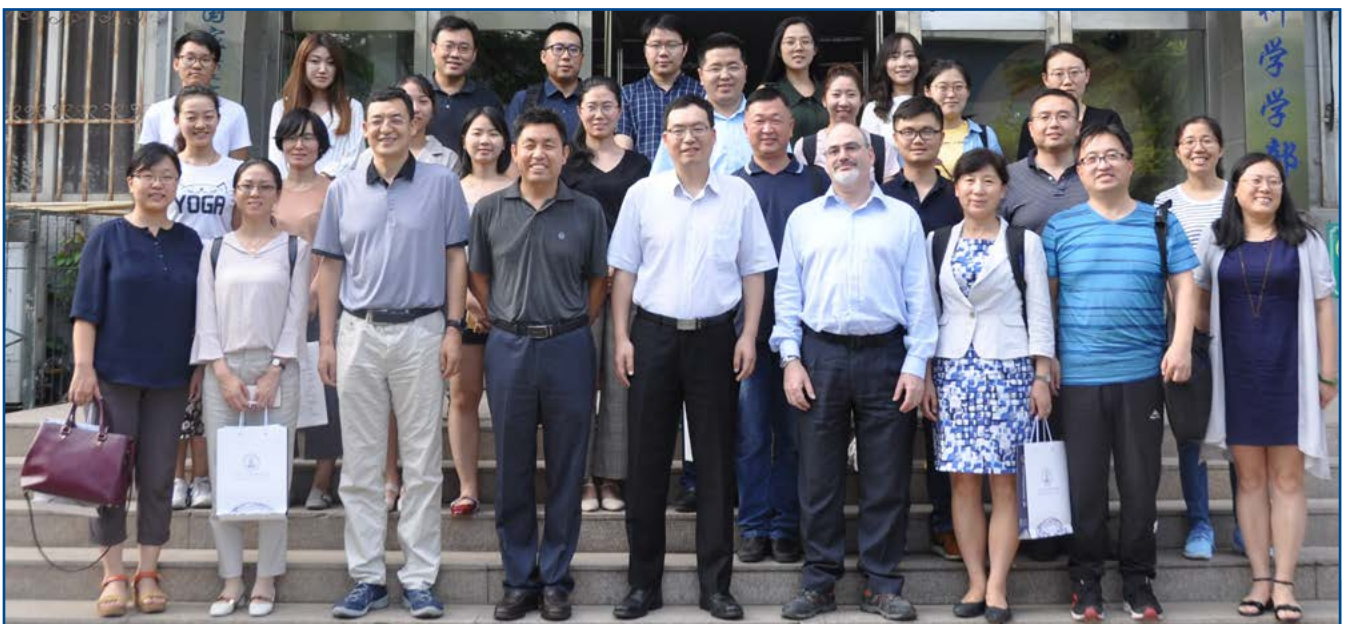
The China Center for Resources Satellite Data and Application (CRESDA) ran a successful Project Manager (PM) training session in Beijing on 13 June 2018. Commissioned by China National Space Administration (CNSA), this training was supported by Roberto Biasutti, from ESA, who presented on the duties and procedures of a PM, Emergency On-Call Officer (ECO) functions, and third party data contributor. More than 30 people from 10 agencies participated the training, which was deemed a great success.

Representatives from Zhuhai Orbita Aerospace Science & Technology Co. Ltd, the National Satellite Meteorological Centre (NSMC), Jilin Chang Guang Satellite Technology Co. Ltd, expressed gratitude to the training organisers, for providing Chinese public/commercial satellite owners, with the opportunity to help with global disaster reduction. They said they had gained more knowledge about the Charter, and are now better prepared to provide data in emergency cases.

The director Mr. HU Chaobin from CNSA, said it is a major responsibility of the administration to cooperate with the Charter. He added that he hoped the training would further contribute to the popularisation of the Charter in China and the development of the CNSA team.

### IN THIS ISSUE

- Spotlight on Charter Project Managers ▶
- UNISPACE+50 ▶
- New look Charter Website ▶
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Participants of the PM training in Beijing.

Photo credit: CRESDA



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## Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration

On 3 June 2018, the Fuego volcano in Guatemala erupted, sending ash 10 km into the sky, plus lava and fast-moving pyroclastic flows down its flanks. Residents of villages, such as El Rodeo and San Miguel Los Lotes, had to flee. Dozens lost their lives, and thousands had to move into temporary shelters.

The Charter was activated in the morning of 5 June, by National Coordinating Agency for Disaster Reduction (CONRED), the Authorized User in Guatemala (Charter Activation 576). The German Aerospace Center (DLR) provided the Project Management.

The Copernicus Emergency Management Service (EMS) provided maps in support of the activation, following a collaboration request by the Charter. In April 2018, the Charter and the EMS had finalised procedures for cooperative work and they were utilised for the first time for this activation.

The image below is one of the results of this collaboration – satellite imagery from 6 June, showing that the main village of San Miguel Los Lotes was destroyed (in red), while other buildings in the surrounding areas (in yellow) were undamaged by the pyroclastic flows, the orange lines show the extent of the flow.

UNITAR/UNOSAT, on behalf of UNOCHA's Guatemala Office, also sent an activation request. Both requests were merged into one activation. UNOSAT's rapid mapping capacity then contributed to the activation, and Bristol University (UK) supported from a volcanologist perspective. The second image is the before-and-after comparison, showing where a bridge and two buildings were destroyed by a pyroclastic flow.

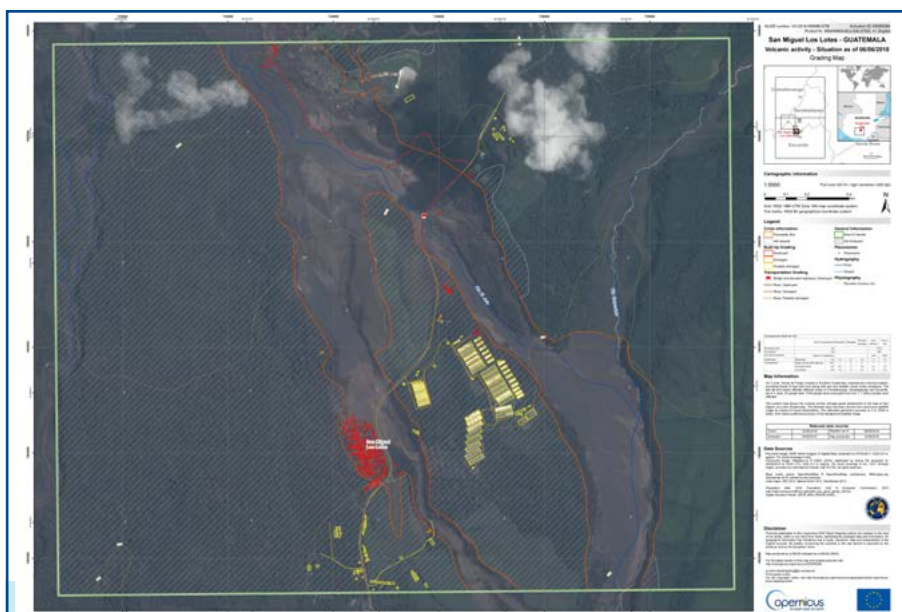
Project Manager Michael Nolde, from the Earth Observation Center of DLR, chose the most useful optical satellite images – “A problem was the cloudiness of urgently needed, very high resolution optical images of the affected villages and mountain slopes, due to the rainy season in Guatemala.”

Regarding the collaboration with all the different organisations involved, he said: “It was a great experience to work with Copernicus, as well as the UN and the University of Bristol, and my impression was that the Charter could provide the best possible information to the users.”

In general, the Charter collaborates with external remote sensing experts and mapping capacities in order to find the best solution for its activations triggered by users worldwide.



Analysis of a bridge before and after the disaster made by UNITAR/UNOSAT based on WorldView data.



Grading map produced by Copernicus EMS. Principal imagery Pleiades

### IN THIS ISSUE

- Spotlight on Charter Project Managers ▶
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- Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration ▶
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August 2018 | Issue 17



Activations on map



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## Charter welcomes new member UAESA

The new member from the United Arab Emirates Space Agency, supported by the Mohammed Bin Rashid Space Centre (MBRSC), was welcomed by Charter members at the 39th Charter Board Meeting in Darmstadt, Germany in April.

In 2017, during the 37th Charter Board meeting in Oxford, UK, a representative from UAESA introduced their organisation and intended contributions to the Charter. UAESA's Space programme includes two VHR optical satellites operated by MBRSC.

In the course of 2017, UAESA brought forward all necessary steps for Charter membership, including a Site Visit & Training meeting that took place at MBRSC in Dubai with participants from UAESA, MBRSC, the National Emergency, Crisis and Disaster Management Authority (NCEMA) as well as Charter representatives from ESA, CSA, and UKSA.



N. Al Rashedi from the UAE Space Agency, is officially welcomed to the Charter Board



Photos of training participants made at the site visit to UAE in November 2017

## IN THIS ISSUE

- Spotlight on Charter Project Managers ▶
- UNISPACE+50 ▶
- New look Charter Website ▶
- Successful Project Manager Training in Beijing ▶
- Eruption of Fuego, Guatemala Charter and Copernicus EMS collaboration ▶
- Charter welcomes new member UAESA ▶