General Assembly

**Committee on the Peaceful
Uses of Outer space**

Report on the knowledge portal of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response: recent advances

I. Introduction

1.   In its resolution 61/110, the General Assembly decided to establish the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) as a programme within the United Nations to provide universal access for all countries and all relevant international and regional organizations to all types of space-based information and services relevant to disaster risk management to support the full disaster management cycle.

2.   Since its establishment, the programme committed itself to implementing the UN-SPIDER knowledge portal to facilitate access to such space-based information and manage the knowledge held by individuals in the form of know-how and experience and the kind of knowledge recorded in a variety of media. The compilation and dissemination of knowledge regarding how space-based information can support risk and disaster management and emergency response is an essential contribution to reducing the impact of natural hazards around the world.

3.   The present report contains a summary of efforts conducted by the UN-SPIDER programme regarding the implementation of the UN-SPIDER knowledge portal. The portal is one of the cornerstones of the UN-SPIDER programme, as its aim is to make available information on all activities conducted by the programme and relevant information on what the disaster risk, emergency response and space communities are doing. It is increasingly recognized that the portal is making a significant contribution to strengthening existing networks; this is clearly reflected in the popularity and use of the resource pages set up to cover major natural disasters such as the earthquakes in Haiti and Japan, the droughts in the Horn of Africa and the floods in many regions of the world.

II. The knowledge portal in the context of UN-SPIDER

4. The UN-SPIDER knowledge portal (www.un-spider.org) constitutes one of the major cornerstones of the UN-SPIDER programme, serving as an entry point for anyone interested in the use of space-based technologies in the contexts of disaster risk reduction, response and recovery efforts. To achieve this goal, the portal has been structured to facilitate access to data generated using satellite applications, in order to increase the awareness of those involved in disaster risk reduction and emergency response through scientific and technical articles and other publications that explain how those data are processed to generate information that can be used to contribute to efforts to reduce the effects of natural hazards in communities around the world. The portal also makes available information on the various types of activities conducted by the programme, including technical advisory support, outreach activities and its networks of regional support offices and national focal points, as well as all official publications related to the programme.

5. The preliminary version of the portal was launched in June 2009. The formal launch of the portal, including a space applications matrix module, in February 2011, coincided with the forty-eighth session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space in Vienna. Additional improvements, as well as customizations and design reviews based on usability, have continued after the launch. At the end of 2014, a new, updated version of the portal was launched.

6. Since its launch, the portal has attracted the interest of the end-user community. This is evidenced by the steadily increasing number of regular visitors, which has reached record levels during major disasters — a clear indication that users find relevant information in the portal for their work and needs. This is also seen from the monthly web access statistics: a significant number of visitors are based in developing countries, often in disaster-affected areas, which affirms that the information provided on the portal is relevant.

A. The portal as an entry point to space-based information

7. In its function as a gateway, UN-SPIDER aims to serve as a "one-stop shop" to access and disseminate information, including case studies and best practices on the use of space-based products to support disaster management. It also aims to help define the content and standards of regional and national spatial databases, including the specific thematic databases that support disaster management, taking into account existing international data standards to facilitate the sharing of data.

8. As a way to contribute to this gateway function, the portal has been designed with three main goals in mind:

(a) To compile all relevant space-based information on a continuous basis, including ongoing and planned initiatives, case studies and best practices and links to both up-to-date and archived data for disaster studies and capacity-building opportunities;

(b)   To serve as an entry point to information on efforts and activities conducted by the UN-SPIDER programme and to all official publications related to the programme;

(c)   To facilitate access to relevant space-based information on a "24/7" basis (24 hours a day, 7 days a week).

B. The portal as a bridge between the stakeholder communities

9.   When establishing the UN-SPIDER programme, the General Assembly also noted that the programme should serve as a bridge between the disaster risk management, emergency response and space communities by fostering alliances, creating a forum where those communities could meet and discuss and ensuring that the disaster risk management and emergency response communities are centrally involved in defining their needs and requirements.

10.   As a way to contribute to this function as a bridge, the portal has been structured to provide information to the space community regarding how the disaster risk reduction and emergency response communities work, and, in a complementary fashion, provide information to the disaster risk reduction and emergency response communities on how the space community has developed products and applications which can be used by these two communities. To achieve these aims, the portal has incorporated specific sections that present information on the following:

(a)   The mechanisms established by the space community to support disaster response efforts in all regions of the world, including the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters), Sentinel Asia, the Copernicus GIO Emergency Mapping Service, the Regional Visualization and Monitoring System (SERVIR) and others, as well as links to websites and portals that contain relevant satellite-derived data, software packages to process such data, specific products and other services offered by the space community;

(b)   The ways in which the disaster risk management and emergency response communities approach their efforts and the frameworks which these communities employ in their routine activities, including information at the national level on civil protection agencies and other government institutions involved in such efforts;

(c)   The way in which United Nations organizations are making use of space-based applications and how the United Nations approaches disaster risk reduction through the United Nations International Strategy for Disaster Reduction (UNISDR) and emergency response and recovery efforts through the Office for the Coordination of Humanitarian Affairs.

11.   In the case of specific, large-scale disasters, the portal also makes available relevant information generated by a variety of institutions to serve as a "one-stop shop" for those in the emergency response community in charge of responding to such disasters.

C. The portal as a facilitator of relevant capacities

12. In its function as a facilitator of relevant capacities, the UN-SPIDER programme has been structured to strengthen institutional arrangements at all levels and to increase the ability of organizations of countries around the world, with a particular focus on developing countries, to effectively use space-based services in disaster risk reduction, preparedness, and response and recovery efforts.

13. As a way to contribute to this role of facilitator, the portal presents information on training activities conducted by UN-SPIDER, training opportunities offered around the world by a variety of institutions (short-term courses, virtual courses and academic programmes) and step-by-step procedures on how to process satellite imagery as a way to derive specific products that are relevant to the disaster risk reduction and emergency response communities.

D. The portal as a measure of the performance of the Office for Outer Space Affairs

14. Taking into consideration the amount of effort and resources that the programme dedicates to the portal, the Office for Outer Space Affairs will begin to incorporate such efforts in a more systematic fashion in 2016 as part of the indicators of performance. The portal is being measured in terms of the services it is providing to the space, disaster risk management and the emergency response communities.

III. Design criteria

15. Efforts to design the portal began in 2007, when UN-SPIDER began its activities. Experts from various institutions were invited to put forward suggestions regarding the structure and contents to be contained in the portal. The Department of Interface Design of the University of Applied Sciences Potsdam in Germany contributed to the design of key elements of the portal, including the Space Application Matrix ("SAM") search engine.

16. In 2012, UN-SPIDER conducted an internal evaluation of the portal at the request of the Office for Outer Space Affairs to identify how the portal should be improved. The evaluation led to a variety of recommendations which have been compiled in the UN-SPIDER knowledge portal road map. That internal document has structured those recommendations in a hierarchical fashion and is serving as the guide to implement them.

A. The selection of Drupal and its advantages in facilitating the easy updating of the content

17. Taking into consideration how the portal is foreseen to work as a gateway to space-based information, experts contributing to the programme suggested the use of an open-source content management system that would be capable of meeting the expected demands. Drupal, Joomla, WordPress, Plone and other similar open-source

content management systems were reviewed, and Drupal was selected for the following reasons:

(a)   The overall size of the active developer community behind Drupal;

(b)   Its capacity to structure the portal in a modular fashion, making it easily expandable;

(c)   The internal structure allows for a strict separation of content, logic and layout;

(d)   The capacity to add and maintain complex content in a simple way;

(e)   The possibility of creating a collaborative platform.

18.   The first version of the portal, launched in 2011, was programmed using version 6 of Drupal. In the second half of 2014, the portal was updated to use version 7 of Drupal in order to incorporate that version's new features.

B.   Discovery of specific content within the portal

19.   Taking into consideration the fact that the portal has to contain a wide variety of content items that need to be discovered easily by visitors belonging to the space, disaster risk reduction and emergency response communities and other stakeholders, the portal has been structured in terms of pages and search engines that facilitate finding such content. For example, the Space Application Matrix search engine facilitates the discovery of specific scientific or technical articles contained in the portal. In a similar fashion, the UN-SPIDER World interactive map has been incorporated into several pages of the portal to facilitate finding specific types of content, making it possible to conduct a search using the geographic-style interface of a dynamic map. For example, the visitor can use a version of the UN-SPIDER World interactive map in the "Advisory support" pages to quickly find information on missions conducted by the programme in specific countries around the world.

C.   Dynamic glossary to facilitate understanding of specific terms

20.   Taking into consideration the fact that the portal must present information using the standard terminology of three separate communities (space, disaster risk reduction and emergency response communities), it is essential for the portal to be able to incorporate a glossary of terms so that any visitor can become aware of the meaning of specific terms employed by any of these communities. From the design point of view, two distinct possibilities were considered:

(a)   A stand-alone version of a glossary as a single document, in PDF format, which could be downloaded and used when viewing the different pages of the portal;

(b)   A more dynamic version, which could be incorporated into the portal so that whenever a term used in any text within the portal is contained in the glossary, the reader would be able to see a short definition of the term hovering above the term and a link to a more detailed explanation.

21.   The decision was made to incorporate the dynamic version. When visitors are viewing any page of the portal, specific words or terms contained in the glossary are presented in a different format. When the viewer places the cursor on any such word or term, a pop-up window will appear with its description. Upon clicking on the word or term, the visitor is guided directly to the glossary, where he or she can also search for additional words or terms.

22.   As part of the design of the portal, it was decided to use the terminology employed by the National Aeronautics and Space Administration (NASA) of the United States of America for those words and terms employed by the space community, and in the case of the terminology employed by the disaster risk management and the emergency response communities, the 2009 version of the UNISDR glossary was employed (see www.unisdr.org/we/inform/terminology).

IV.   Structure of the portal

A.   Structure from the point of view of the end-user

23.   As stated earlier, the portal serves as an entry point for anyone interested in the use of space-based technologies in the contexts of disaster risk reduction, response and recovery efforts. The portal is also the vehicle that is used by UN-SPIDER to present information on its activities, its networks, the projects it is conducting, the events it organizes around the world and specific publications. The home page provides access to the most recent news from the three communities, quick access to the Space Application Matrix search engine, the network of regional support offices, events conducted by UN-SPIDER and its most relevant publications. Tabs for sections containing information generated by the space community are grouped in the leftmost area at the top of the home page, while section tabs for information generated by UN-SPIDER are grouped in the rightmost area.

24.   Given that there is a huge amount of relevant information generated by the space community that can be used in disaster risk reduction, response and recovery, it is important for the programme to structure access to such information to make it easily discoverable. In this context, it is important to take note that this information is accessible in the form of scientific and technical publications, in the form of news and in the form of articles in magazines or similar publications. In addition, it is important to recognize that the information produced by the space community, like the information produced by any other community, is presented either in printed or digital fashion, and more and more often in websites. As a way to accommodate the different ways in which this information is presented, the portal has been structured so as to present it in a very systematic fashion.

B. Presenting data and information generated by the space and the disaster management communities

25. Some of the portal's pages make available content produced by the space, disaster risk and the emergency response communities:

(a)　The Space Application Matrix search engine is used to find scientific papers and technical reports contained in the portal. It is structured on the basis of three search criteria: first, space technology (satellite communication, satellite positioning and navigation, and Earth observation by satellite remote sensing); second, the disaster cycle phase (mitigation, preparedness, response and recovery); and third, the hazard type (earthquake, pollution, severe storm, fire, tsunami, volcano, mass movement, insects, epidemic, temperature, drought or flood) or the human dimension (e.g., health, infrastructure, humanitarian and security). By selecting one of the 192 fields, the user receives information on and links to relevant papers on and technical specifications of the space technology used;

(b)　The "Risk and disasters" page presents an overview of the ways in which the disaster risk management and the emergency response communities conduct their efforts. Dedicated segments within these pages make available content on how the United Nations is addressing disaster risk management efforts under the umbrella of UNISDR and how the United Nations is addressing emergency response efforts through the Office for the Coordination of Humanitarian Affairs. The page also contains information on a variety of natural hazards, and it can include content that is made available for a specific period of time, for example the segment dedicated to the 2015 World Conference on Disaster Risk Reduction and the post-2015 efforts related to disaster risk reduction;

(c)　The "Links and resources" page includes databases on software, data, training opportunities and institutions. The content is structured in a way that related content items are interlinked. For example, an entry in the database on satellite data is linked to the data provider in the institutions database, the corresponding Space Application Matrix case studies on the respective data set, related software and to tutorials and recommended practices. This way, the user will find all relevant information, no matter which entry point is chosen for the start of the research. The filtering options of the databases are unique as they include search criteria closely related to the mandate of UN-SPIDER, for example the phases of the disaster management cycle or the different hazard types. This page also contains a continuously updated database on web-based, academic and short-term training courses offered by institutions such as the regional centres for space science and technology education, affiliated to the United Nations, centres of excellence, universities and other training centres.

C. Presenting information from UN-SPIDER, its networks and projects

26. Some of the portal's pages contain information generated by UN-SPIDER:

(a)　The "Advisory support" page in the portal contains specific information on how UN-SPIDER provides technical advisory support to countries, either through missions, in the case of emergencies or disasters, and through training

activities. The information regarding such missions can be accessed through the UN-SPIDER World application, which allows the visitor to click on the country of interest, and the information on missions is then presented in the form of a summary box describing the mission, which contains a link to another page containing all content related to the mission. This page also contains the recommended practices that have been elaborated by the regional support offices and other partners, which contain step-by-step instructions on how to process satellite imagery to derive useful information for disaster risk management and emergency response;

(b) The "Network" page presents information on two networks that have been established by UN-SPIDER: the network of regional support offices and the network of national focal points. In addition, it makes available information on other networks that have been set up by the programme for specific purposes;

(c) The "Project" page presents information related to projects where UN-SPIDER is directly involved and links to relevant documents and institutions that may be involved in those projects;

(d) The "News and events" page has been set up to facilitate finding news that has been posted in the portal throughout the years; it also contains pages dedicated to events organized by UN-SPIDER or its partners. This page is expected to be used to find information on events organized by UN-SPIDER in previous years;

(e) The "About us" page contains information describing the general aspects of UN-SPIDER, information on the Office for Outer Space Affairs and all publications elaborated by UN-SPIDER, including booklets, newsletters, monthly updates and all official annual reports in the six official languages of the United Nations.

27. In the case of specific disasters for which UN-SPIDER has been requested to provide technical support, the portal contains links to the information generated by a variety of stakeholders. Of particular interest are the links to satellite imagery made publicly available by space agencies and specific products such as maps generated by other institutions.

V. Services provided by the portal

A. Raise awareness of the potential of space-based information for disaster risk reduction and emergency response

28. One of the objectives of the UN-SPIDER knowledge portal is to highlight the multifaceted way in which space technologies can support disaster risk reduction and emergency response efforts by providing relevant data and information. As the knowledge of users can differ greatly, the UN-SPIDER knowledge portal uses a holistic approach to present the usefulness of space technologies. For users who have no or little technical background in space technologies, the sections "User stories" and "Space applications in the United Nations" present anecdotal and real-life evidence of space applications outside and within the United Nations system, respectively.

29. Taking the form of experience reports, interviews or illustrative articles, these examples serve as an eye-opener to users as to the difference that space technologies can really make in a specific situation and how varied space applications are. For users who already have a basic understanding of the benefits of space technologies, the space application matrix search engine gives deeper and more technical insight. It is complemented by the e-publication *Geoinformation for Disaster and Risk Management: Examples and Best Practices*, which provides insight for the user on space technology applications in a technical and illustrative way.

B. Raise awareness of the emergency mechanisms operated by the space community

30. Several mechanisms have been established by the space community to provide satellite-based emergency products in a timely way, such as the International Charter on Space and Major Disasters, Copernicus GIO Emergency Mapping Service, SERVIR, the Operational Satellite Applications Programme (UNOSAT) of the United Nations Institute for Training and Research (UNITAR) and Sentinel Asia. These mechanisms differ greatly in their scope, the ways they are triggered and the products they deliver. To facilitate the use of these mechanisms, the portal offers profiles for each of the major mechanisms in its "Emergency mechanisms" section. Each profile follows a similar structure, providing detailed information on the prerequisites to request the activation of the mechanism, authorized users and processes and products, including a workflow graphic for each mechanism, which makes it easier to quickly understand.

C. Present information from UN-SPIDER, its networks and its projects

31. In addition to presenting information on the efforts conducted by the space, disaster risk management and emergency response communities, the portal serves as a gateway to the efforts that UN-SPIDER is conducting. Specific pages of the portal provide information on the technical advisory support provided by the programme, its networks of regional support offices and national focal points, the project it is conducting and all technical and official publications related to the programme.

D. Act as a hub for relevant data, software and training opportunities

32. The "Links and resources" section contains links to a wealth of external resources, most of which are free. The section offers several databases, including data sets, software and training opportunities. Using the search engine, the user can filter entries, as needed. For example, in the database on satellite-based data sets and services, the users can search by region, resolution, hazard, disaster management phase and many other parameters. Users are then offered a short description of the data sets, including requirements, accessibility, costs, restrictions, satellites and sensors used, technical specifications and links to tutorials. With this information, users are able to locate the proper data for their situation. If they then want to access or download the data, they can do so via the external link provided.

As in the case of the database on satellite data sets, in the database of geographic information systems and remote sensing software, users can search by various variables, including software type and data format supported or hazards, helping the user to identify the right one. The user is then provided with a comprehensive overview of the characteristics of the software, as well as an external link to the provider of such software. Finally, a database of training opportunities guides the user to relevant offers from third-party providers of training courses. The database, which is updated regularly, includes information on free and paid courses, as well as online and physical courses and academic degree programmes. Each course is presented in an individual entry in which the user learns about details of the courses, registration deadlines, fees and venue and can access further information via an external link.

E. Provide guidelines and instructions on using space applications

33. Complementary to the "Links and resources" section, which offers entry points to access useful resources, the portal also includes recommended practices elaborated by its network of regional support offices. These practices are the outcome of an intense and fruitful collaboration that began in 2012. Each practice presents the methodology for a specific application, including flood plain delineation, flood mapping from radar imagery, crop yield prediction and vegetation monitoring for drought early warning. The practices are meant to serve as examples of methodologies that can be used to generate specific products. Therefore, each practice includes an introduction with a flowchart, as well as two more detailed subordinate pages, one page outlining the specific details of the practice and another containing step-by-step instructions.

F. Provide up-to-date information on activities in all stakeholder communities

34. The UN-SPIDER knowledge portal includes relevant and up-to-date news and an events calendar containing information on meetings, conferences and workshops. The news articles provide the space, disaster risk management and emergency response communities with information on new developments in each of these communities, highlighting major achievements, projects, satellite launches or opening of new data sources.

35. The events calendar makes visitors aware of upcoming and relevant meetings and conferences, and it provides further information and links on how and when to register to attend the event by providing information on the exact venue, registration deadlines and a direct link to the organizer. For past events organized by UN-SPIDER and its partners, all related preparatory and outcome documents, as well as presentations, are made available via the events section.

G. Present the context and specific needs of the disaster risk management and emergency response communities

36. The portal contains a "Risks and disasters" section, which sheds light on the realities under which disaster responders and disaster risk managers work, what language they use, under which frameworks they operate and what challenges they face. It also explains why space-based data are so pertinent to the work of these communities and, perhaps even more importantly from the provider's point of view, exactly what information is needed. This section also includes a description of the global post-2015 disaster risk reduction framework, which will become effective as of March 2015.

H. Provide information on relevant institutions and regional support offices

37. In addition to providing information on the context, news and events of all of its stakeholder communities, the portal also provides contact information on selected institutions, thus fostering bilateral knowledge exchange. The institutions database allows the user to search for relevant institutions by country, keyword or in an alphabetical fashion. The individual entries feature a short description of the institution and an external link. The profile pages of the UN-SPIDER regional support offices go into greater detail, providing background information on the institutional set-up of those offices, as well as on available resources and expertise, the latest news, upcoming events and detailed contact information. Users can browse the regional support offices profiles by name or by means of a map in order to identify, learn about and contact a regional support office in their region of interest or elsewhere.

I. Provide information on the services that UN-SPIDER offers to countries

38. Since UN-SPIDER provides technical advisory support only upon the request of a Member State, the portal presents the programme's advisory services to potential future requestors. In the "Advisory support" section, the user can access background information on the types of support offered, as well as specific information on individual missions conducted in the past, namely technical advisory missions, expert missions, institutional strengthening missions and training activities. The user can browse these missions by type of mission, region or on a map to easily identify activities in their region of interest. Each mission or activity is presented, outlining the mission profile and major outcomes, as well as relevant documents, where applicable. Furthermore, the "Advisory support" section contains a database on cases in which UN-SPIDER provided emergency support by compiling relevant data sets and products offered by external providers, thus allowing users to quickly access pertinent information in emergency situations.

J. Registration for UN-SPIDER events

39. One of the key functions of the portal is to serve as the entry point for those interested in participating in UN-SPIDER expert meetings, workshops and conferences. The online registration segment of the portal, using the "CiviCRM" application, serves as the entry point to the application form that needs to be submitted, and includes relevant information on the event itself, including the information note, the programme of activities and other complementary information related to the event being organized by the programme.

40. From the point of view of the organizing committee, the registration platform offers easy access to all applications so that they can be systematically reviewed. The data can be downloaded in an Excel file containing all the relevant fields of information contained in the application form. Once in the Excel document, all applications can be reviewed, and the selection process can be conducted more easily.

VI. Enhancing the use of the portal

A. Spanish and French versions of the portal

41. The UN-SPIDER knowledge portal is a platform aimed at a global audience, with a particular focus on developing countries. In February 2014, the English version of the content was therefore complemented by a Spanish version. In December 2014, a French version was added. Via buttons at the top and bottom of each page, the user can easily switch between versions and see which content is available in languages other than English. In the French and Spanish versions, mostly static elements, which are not subject to frequent change, were translated, as they would remain valid over a long period of time. A special focus was placed on content items of particular value for the Spanish-speaking audience in Latin America and the Caribbean and for the French-speaking audience in Africa. Those content items include, for example, profiles of regional support offices or advisory missions in the respective regions.

B. Discussion forums within the portal

42. The portal offers discussion forums for its networks and will enhance this feature in the future. The objective is to allow groups to discuss among themselves and share ideas, experience, files and links. In these forums, users can post a new topic or reply to an existing thread. In the pilot phase, a closed and password-protected forum has been created for the International Working Group on Satellite-based Emergency Mapping (IWG-SEM), a group of which UN-SPIDER is a member. Other forums will be added depending on the need and applicability.

C. Relaunch of the portal

43. In November 2014, hand in hand with an upgrade from version 6 to version 7 of Drupal, the portal was relaunched. The upgrade from Drupal 6 to

Drupal 7 had become necessary as service to Drupal 6 will be discontinued in the near future. The upgrade from Drupal 6 to Drupal 7 also allowed for a responsive design that adapts to different screen sizes and device displays, for example on smartphones or tablets. Colours and fonts were adapted to the recently established corporate design guidelines of the Office for Outer Space Affairs, and the overall visual design was adapted to be much lighter and visually clearer by better employing design principles of proximity, alignment, repetition and contrast. The home page was completely restructured to provide better and more relevant entry points into the most important sections and elements of the portal. Furthermore, the recall value of the portal as a branded product was strengthened by including the words "Knowledge portal" in the new header, displayed on every page.

VII. The portal in figures

A. Statistics on visitors since its launch in 2009

44.   Since the launch of the preliminary version on 5 June 2009, the portal has attracted nearly 350,000 visitors from 228 countries and territories, generating a total of 1.2 million page views. Most visits originate in the United States, followed by Germany, India, United Kingdom of Great Britain and Northern Ireland, Austria, Canada, France, Italy, Japan, the Philippines, Australia, Pakistan, the Netherlands, Nigeria and Spain. Visits to the site last an average of approximately 3 minutes.

45.   There was an increase of 85 per cent of visits by visitors from Spanish-speaking countries, comparing the period six months before and after the roll-out of the Spanish language version of the portal in February 2014. With respect to how people found the portal, roughly 45 per cent of people reached the website through search engines, 28 per cent accessed it directly, 21 per cent were referred to the portal from links on other sites and 6 per cent accessed the portal through social media channels.

B. Content items

46.   Since the launch of the preliminary version of the portal in June 2009, a total of 6,300 content items have been published. Almost half of those items showed the latest developments in science and technology, covered availability of satellite imagery products and informed about developments, synergies and approaches. The other half were compilations of information about the UN-SPIDER network, for example the regional support offices, available data sources, geographic information system software tools, case studies, relevant institutions and information about specific disaster events, with corresponding lists of available pre- and post-disaster data.

C. Social media referrals

47.   UN-SPIDER uses social media channels to enhance the dissemination of information about and on the portal. Facebook, Twitter and Google Plus are used to broadcast the latest additions of content on the portal. Those three channels are

currently among the largest worldwide social networks. Since they were set up in January 2013, the UN-SPIDER social media channels have generated 28,000 sessions on the portal. UN-SPIDER has a total of 10,000 followers on the above-mentioned social media channels. With the effect of the "multiplication factor" of social networks, an even larger number of persons can potentially see information disseminated through the UN-SPIDER social media channels, even if they do not follow UN-SPIDER themselves.

D. In the sights of Google, Bing, Yahoo and other search engines

48.   Search engines, which Internet users rely on, make use of automated scripts that crawl through the World Wide Web, indexing all content they find, in order to provide helpful search results to users. As a worldwide service, UN-SPIDER relies heavily on this approach. Therefore, it is important to track how well search engine scripts crawl through the portal pages. All such automated scripts generate roughly 1,200,000 monthly page views, with Google, Microsoft and Yahoo being the most active search indexers. A good portion of automated page visits is caused by spammers. A peak of over 6,800 spamming attempts was recorded in mid-October 2014, following an increasing average of roughly 1,500 attempts per day.

E. Specific cases (large disasters)

49.   With an average of 1,000 daily page views by real users, some peaks have to be highlighted. The highest number of visits to the portal took place during the 2011 earthquake and tsunami in Japan, when a total of 10,000 visitors had almost 22,000 page views, looking for the detailed overview of available pre- and post-disaster products derived from satellite applications and links to satellite imagery.

VIII. The way forward

A. Migration to the cloud

50.   Following the increased need for stable and reliable servicing of the portal throughout the world and respecting the mandate of UN-SPIDER to give all countries access to space-based information for disaster risk management and emergency response, the complete contents of the portal will be migrated to cloud hosting, allowing a high level of availability, fast connection and low risk of hardware malfunction, paired with maintained base operating system stability and the managed services offered by the respective hosting provider. The migration allows UN-SPIDER to offer access to the portal on a 24/7 basis, without the need for qualified personnel in the team to take care of the technical issues.

B. Observing technological developments and trends to improve the services

51. Recognizing the need to ensure that the portal is achieving its aims, UN-SPIDER staff continually review technological trends and developments as a way to assess how best to incorporate them into the portal. Efforts have been conducted to facilitate the use of the portal in small devices such as smartphones and tablets. In a similar fashion, the new version of the portal launched at the end of 2014 incorporates new layouts.

C. Enhancing the use of the portal as a training tool

52. Taking into consideration that UN-SPIDER needs to facilitate capacity-building and institutional strengthening and that the portal has amassed a considerable amount of content, the programme is now devoting efforts to structuring the use of the content of the portal on training activities conducted by the regional support offices and partners including centres of excellence. Such efforts envision the use of the step-by-step procedures contained in the section on recommended practices as a way to develop specific products useful to the disaster risk management and emergency response communities, which can be facilitated through access to data and software packages presented in the "Links and resources" page and complemented by scientific and technical articles contained in the Space Application Matrix search engine.

53. Additional efforts will make use of other segments of the portal, including with respect to how to activate emergency mechanisms established by the space community, such as the International Charter on Space and Major Disasters, Sentinel Asia, as well as with respect to the benefits of using space-based applications in all phases of the disaster management cycle.

D. Opportunities for collaborative service development

54. Taking into consideration the combined experience and knowledge of the regional support offices, the national focal points and other experts who are contributing to the programme, in the coming years it is foreseen that such regional support offices, national focal points and experts will play a more active role in keeping specific pages or sections of the portal up to date and dedicate efforts and resources to conceive and add new features or components to the portal. For example, regional support offices in Latin America may take up a stronger role in keeping the Spanish language version of the portal up to date, and regional support offices in Eastern Europe may take the leading role in the translation of the content of the portal into Russian as a way to enhance its audience in Russian-speaking countries. A similar initiative can be foreseen for Chinese and Arabic in order to make the portal available in the six official languages of the United Nations.

55. Other regional support offices may wish to dedicate efforts to keep the "Links and resources" page up to date and to develop and implement new recommended practices on the use of space-based applications in a variety of applications, in particular as a way to contribute to the implementation of the post-2015 framework

for disaster risk reduction that will be launched during the World Conference on Disaster Risk Reduction to be held in Sendai, Japan, in March 2015.

56.   In a similar fashion, it is expected that national focal points will make a more proactive use of the portal to exchange lessons learned and relevant content related to the institutionalization of the use of space-based information in their countries, which could then be used by other national focal points for such a purpose.

57.   UN-SPIDER will encourage members of the space community, disaster risk reduction and emergency response communities to become engaged in joint efforts to identify additional types of contents or services that could enhance the use of space-based applications in disaster risk reduction and emergency response efforts. In this fashion, the portal would contribute to the bridging function of UN-SPIDER.

IX.   Concluding remarks

58.   As stated in the introduction, the portal constitutes one of the major cornerstones of the programme. Since its implementation in 2009, the portal has facilitated access to space-based information and solutions that can support efforts in disaster risk management and emergency response. In the past five years, a solid amount of content has been compiled from a variety of sources and has been introduced in the portal so that it can serve as an entry point to those interested in the use of space-based information as a way to strengthen their skills and knowledge. In a similar fashion, efforts have been conducted to assemble and present content on the mechanisms that have been set up by the space community to support disaster response efforts worldwide and to allow for the discovery of data and products generated by the space community.

59.   In a complementary fashion, the portal has been structured to serve as a platform that contributes to bridge the space and the disaster management communities.

60.   As a way to enhance the number of visitors to the portal, considerable efforts are dedicated to keeping the portal up to date and to incorporating relevant and pertinent news from the communities that the portal is bridging. In a parallel way, social media efforts are used to attract new visitors to the portal through channels such as Google, Facebook and Twitter.

61.   Since 2013, efforts have been conducted as a way to increase the relevance and impact of the portal, with a particular focus on developing countries through the introduction of step-by-step procedures, links to websites and portals that make available satellite imagery, products, links to specialized software and information on training opportunities. Efforts are also under way to facilitate access to specific satellite imagery in the case of those countries that have officially requested technical advisory support.

62.   In the years to come, UN-SPIDER will make use of the portal in a more proactive way to contribute to a more concerted international cooperation and an enabling international environment, which are required to stimulate and contribute to developing the knowledge, capacities and motivation needed to enhance the resilience of nations as a way to achieve a more sustainable development, free from the impacts of natural hazards.

––––––––––––––