**Sentinel services for agriculture**

In March 2017 the European space agency ESA will launch another Sentinel earth observation satellite. Sentinel-2B will be launched from Kourou with ESA’s lightweight launcher Vega. It will become the 5th Sentinel satellite on orbit.

Sentinel 2 B will join its sister satellite Sentinel-2A and the fleet of other Sentinels launched as part of the Copernicus programme, the most ambitious Earth observation programme to date. Sentinel-2A and 2B will be supplying ‘colour vision’ for Copernicus and together they can cover all land surfaces once every 5 days. This way the sentinel-2 satellites are optimising global coverage and the data delivery for numerous applications.

The data provided by these Sentinel 2 satellites are particularly suited for agricultural purposes, such as managing administration and precision farming. In the Czech Republic Sentinel data has been used successfully since last year.

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| 10:00:00:00   * EXT. Ondřej Bačina Farm – views, machines, people, 4 shots – Czech Republic – 13/02/2017 – ESA * INT. Ondřej Bačina Farm – Discussion at kitchen table, 2 shots – Czech Republic – 13/02/2017 - ESA | A farm east of Prague in the Czech Republic. The 1000 hectares, family farm of Ondřej Bačina aims to be a modern technology driven farm. To achieve this the most recent developments in agricultural technology have been implemented  Today on Ondřej’s farm land management is done with the help of satellite imagery and data. And for the farmer this really makes a difference. |
| 10:00:35:21   * INT. Ondřej Bačina Farm – Discussion at kitchen table – Czech Republic – 13/02/2017 - ESA | **ITW Ondřej Bačina, Farmer - CZ**  In our family farm we understand that imagery, satellite -and we also tried online sensors-, are very important. It increases the efficiency of human resources, allowing us to minimize negative effects on the environment, so that is a crucial argument for us to keep the land in a sustainable quality, allowing to do the farming, for our children in the future. |
| 10:01:05:02   * EXT. Agricultural vehicles working – 2 shots –unknown date – videoblocks * EXT. view of Prague city, 2 shots – Prague, Czech Republic – 13/02/2017 – ESA * INT. State Agricultural Intervention Fund office, -people working, 5 shots – Prague, Czech Republic – 13/02/2017 - ESA | Since 2016 some European Union Member States have integrated Sentinel satellite data into the process of the controlling EU agricultural subsidies. In the Czech Republic, this is managed by the State Agricultural Intervention Fund, the so-called “paying agency” located in Prague. They use remote sensing techniques in the framework of a European Common Agricultural Policy. The Sentinel data can for instance be used for national crop type mapping before the end of the season. The Sentinel satellites have the potential to increase the efficiency of the agricultural subsidies administration. |
| 10:01:43:18   * INT. State Agricultural Intervention Fund office – Prague, Czech Republic – 13/02/2017 – ESA | **ITW: Lucie Šavelková, State Agricultural Intervention Fund / CZ**  Due to the frequent data capture and the wide area coverage Sentinel data allows us to carry out several activities. For example sentinel data allows the land use type and crop type classification. And also regular monitoring of several agricultural activities. For example verification of ploughing of grassland cutting. And therefore it could bring a mutual synergy among the farming community and the paying agency institutions, in managing the agricultural area related subsidies. |
| 10:02:31:24   * INT. Ondřej Bačina Farm – Discussion at kitchen table, 1 shot – Czech Republic – 13/02/2017 – ESA * STILL. Crop type mosaic of Czeh Republic, 2 shots – 2017 – ESA * INT. State Agricultural Intervention Fund office, -people working, 1 shot – Prague, Czech Republic – 13/02/2017 - ESA * EXT. Ondřej Bačina Farm – people, and Tech equipment, 2 shots – Czech Republic – 13/02/2017 – ESA * Leaf area index time series video of Belgium – 2017 – ESA * EXT. AERIAL Agricultural langscape – 1 shot –unknown date – videoblocks * INT. GISAT offices, -people working and maps, 7 shot – Prague, Czech Republic – 13/02/2017 - ESA | To receive agricultural subsidies, farmers have to launch an application each year. This application includes a declaration of the agricultural parcels and their use.  With the use of Sentinel data these declarations can now be more easily verified by the Paying Agency.  For the farmers this application is more than a tool to receive subsidies. It may also represent a smarter way of managing their fields. This is known as “precision farming”. Frequent satellite observations allow the farmers to create time series on the status of their crops in a timely manner. Through these tools and information the farmers can better assess the success of their operations. This approach to farming management is now possible thanks to companies like GISAT, ‘geographical information from satellites’, based in Prague. GISAT processes satellite imagery so as to make it “understandable” and usable in many areas. Operating since the 1990`s, today GISAT employs 20 people processing satellite data. They offer a lot of different applications in a range of sectors and in recent years they have seen agriculture becoming an increasingly important activity. |
| 10:03:47:03   * INT. GISAT offices – Prague, Czech Republic – 13/02/2017 - ESA | **ITW: Luboš Kučera, Managing Director, GISAT**  Specifically in case of agriculture monitoring, core agricultural application, the availability of Sentinel imagery really brings new opportunities for the commercial companies, like us. Because the availability of free data, the availability of data in a really frequent manner allows the analyses of vegetation development, vegetation monitoring, which was not possible in the past. |
| 10:04:22:17   * ANIMATION. Sentinel-2 satellite fly-by – unknown date – ESA * INT. GISAT offices, - map, 1 shot – Prague, Czech Republic – 13/02/2017 - ESA * EXT. Ondřej Bačina Farm –Views and Crop duster, 3 shots – Czech Republic – 13/02/2017 – ESA * ANIMATION. Sentinel-2 satellite solar panel deployment – unknown date – ESA | ESA continues to work closely with the European Commission to understand the  full range of opportunities Earth observation can contribute to modernize and  simplify the Common Agricultural Policy. Indeed with more and more satellite  data, the benefits are clearly visible on Earth and agriculture is an  excellent example of what operational systems like the Sentinels can bring to our society. |
|  | **B-Roll** |
| 10:04:48:23   * INT. Ondřej Bačina Farm – Discussion at kitchen table – Czech Republic – 13/02/2017 - ESA | **SOUNDBITES: Ondřej Bačina, Farmer – Czech**   * **Soundbite 1 clean:** In our family farm we understand that imagery, satellite -and we also tried online sensors-, are very important. It increases the efficiency of human resources, allowing us to minimize negative effects on the environment, so that is a crucial argument for us to keep the land in a sustainable quality, allowing to do the farming, for our children in the future. * Soundbite 2: "In a long term satellite data allows us to carry time series, and with the increasing amount of satellites we have a better possibility to get the information on time, and we can react on the information provided through the satellite data and follow it up by operations and even make assessment if the applied operations are efficient and met our expectations. " |
| 10:05:52:00   * INT. State Agricultural Intervention Fund office, -people working – Prague, Czech Republic – 13/02/2017 - ESA | **SOUNDBITES: Lucie Šavelková, State Agricultural Intervention Fund CZ - English**   * Soundbite 1: What is SZIF? * Soundbite 2: What is sentinel data used for. * Soundbite 3: Improvements with sentinel? |
| 10:07:41:05   * INT. GISAT offices – Prague, Czech Republic – 13/02/2017 - ESA | **SOUNDBITES: Luboš Kučera, Managing Director, GISAT – English**   * Soundbite 1: How is satellite data used in agriculture * Soundbite 2: how has sentinel data had an impact on GISAT and their processes * Soundbite 3: On precission farming |
| 10:10:33:00   * INT. GISAT offices – Prague, Czech Republic – 13/02/2017 - ESA | **SOUNDBITES: Luboš Kučera, Managing Director, GISAT – Czech**   * Soundbite 1: How is satellite data used in agriculture |
| 10:11:29:14   * INT. Ondřej Bačina Farm – Discussion at kitchen table – Czech Republic – 13/02/2017 – ESA | **Shots of Ondřej Bačina’s Farm – Interior and exterior** |
| 10:14:01:00   * STILL. Crop type mosaic of Czeh Republic, 2 shots – 2017 – ESA * Leaf area index time series video of Belgium – 2017 – ESA | **Illustration material**   * **mosaic of crop map Czech Republic 2 stills** * **Leaf Area index time series of Belgium** |
| 10:14:35:21 | **END** |