



Το Copernicus για επιχειρηματίες και προγραμματιστές

Ελευθέριος Μαμάης
7 Οκτωβρίου 2016



Copernicus

COPERNICUS USER UPTAKE IN GREECE



Source: [Copernicus User Uptake Report – February 2016](#)

2



Copernicus

Ο U T L I N E

- Το ευρύτερο πλαίσιο
- Επισκόπηση των βασικών χρηματοδοτικών μέσων
- Επιλογή του κατάλληλου μέσου
 - Επιδοτήσεις (grants)
 - Χρηματοδότηση χρέους (debt financing)
 - Μετοχικό κεφάλαιο (Equity capital)
 - Άλλα μέσα
- Επιτυχημένο παράδειγμα χρήσης δορυφορικών εικόνων στην πραγματική αγορά
- Σύνοψη
- Περισσότερες πληροφορίες



CONTEXT



Copernicus

THE COMMERCIAL DOWNSTREAM SECTOR IS GROWING FAST ...

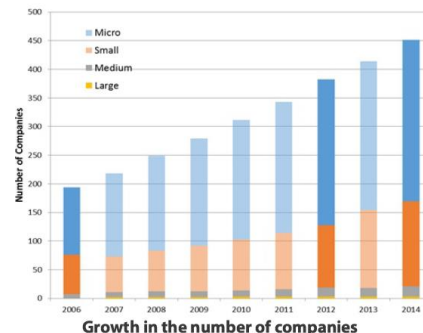
- Emergence of new Earth Observation business models backed by risk capital (e.g. Skybox , Planet Labs , Urthecast)
- Development of sophisticated cloud-based platforms for intensive data processing (Sentinels big data and integration with other data sources)
- Significant public investment in the EU in the development of EO
 - Support of R&D programmes
 - Innovative public procurement (e.g. EO-related PCP)
 - Support to incubators, new financial tools, boost of GEO-ICT skills
 - Public-private-partnerships to support EO market



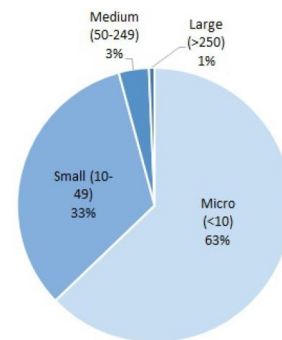
Copernicus

THE COMMERCIAL DOWNSTREAM SECTOR IS A KEY ACTOR OF COPERNICUS

- The commercial downstream sector has a key role to play in maximising the benefits of Copernicus:
 - Commercialisation of Copernicus-based tailor-made applications
 - Reach out to new users, communities and sectors
 - Export to international markets
 - The number of EO companies (~450) has doubled over the last 7 years
 - In 2014, the EU EO services sector made over €900m and accounted for nearly 7000 highly-skilled jobs (EARSC Industry Survey)
- The commercial downstream sector is a prime target of EU policies and funding instruments



Growth in the number of companies





Copernicus

A WIDE VARIETY OF PUBLIC AND PRIVATE FUNDING OPPORTUNITIES

- Funding instruments developed by EU institutions **tailored to start-ups and scale-ups**
- Private funding instruments **available on the capital market**
- Action lines sometimes **explicitly related to Copernicus or Space-based applications**
- **Not domain-specific** in most cases and usable for EO downstream applications



Initial
Idea



Business
Plan



Marketable
Product



Commercialisation



Expansion



Credits: ESA / P.Carril & J. Huart



Main TYPES of funding Instruments



Copernicus

T H E R E A R E 3 M A I N G R O U P S O F I N S T R U M E N T S

- **Grants:**
 - Non-repayable funds disbursed by a (public) entity to fund one or several beneficiaries for the execution of a “project”.
 - Awarding based on the evaluation of technical and financial proposals submitted by applicants.
 - Monitoring based on pre-established reporting procedures.
- **Debt financing:**
 - The borrowing of capital to use within a company, without loss of equity.
 - Repayments on the borrowed capital paid at a fixed rate over a set time period.
 - Capital loaned after a financial review of the company, its assets and future potential.
- **Equity:**
 - Capital provided in exchange for a share of equity in the company.
 - Capital provided with the expectation that the company will be profitable, and the equity will thus be returned for a greatly increased amount of capital.
 - Equity received following a successful pitch to potential investors.

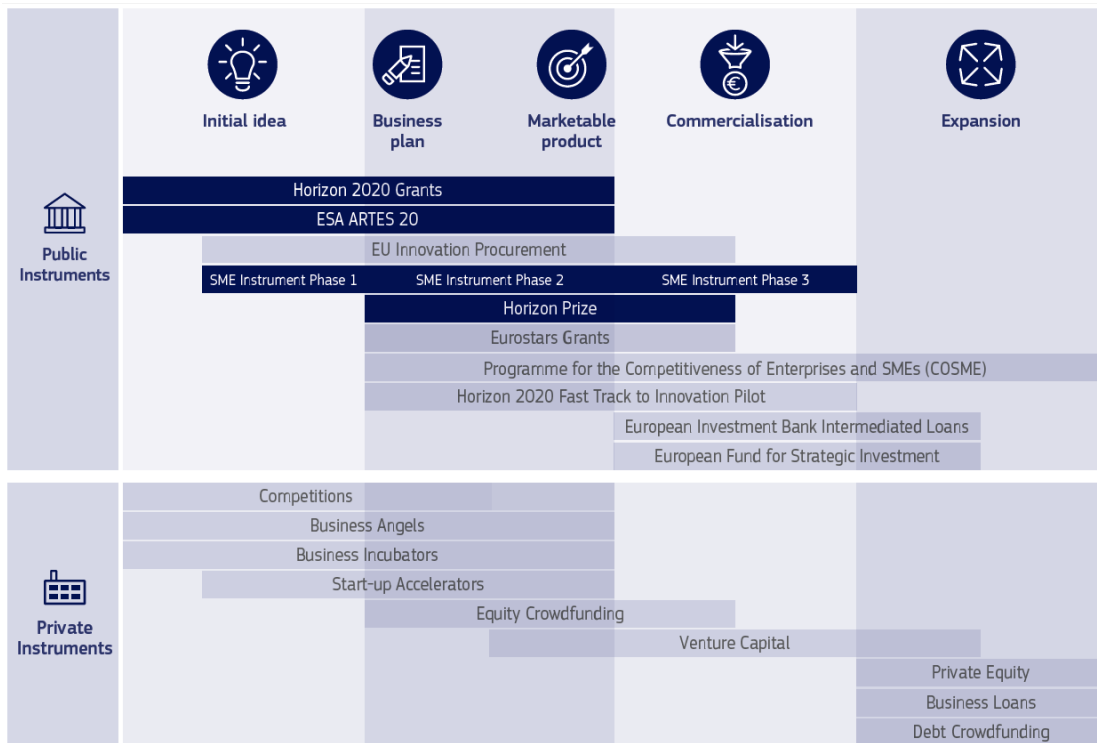


Copernicus

IN SHORT: THERE IS SOMETHING FOR EVERYONE BUT GUIDANCE IS NEEDED

Selecting the most relevant instruments depends on several criteria:

- Type of funding needed
- Development stage of a product/company
- Need for partnering
- Need for additional support



■ Instruments specifically relevant to Copernicus downstream applications



How to choose
the right
instrument and
be successful?



Grants



Copernicus

WHEN TO CHOOSE GRANTS?

- Your product development stage still includes R&D activities
- You have skills and capacity to take part in an international project – usually a strong international consortium is key
- You have time and skills to develop an excellent proposal and follow a standard procedure:
 - Respond to a call
 - Develop and submit a proposal (most often with other partners)
 - Wait about 6 months for evaluation
 - Sign the Grant Agreement
 - Implement your project in line with the funder procedure
- You are ready to co-finance part of the project costs



Copernicus

R & D for innovative concepts CAN BE FUNDED BY H2020 Grants



Initial Idea



Business plan



Marketable product



Commercialisation



Expansion

- Include topics such as Earth Observation, Environment monitoring, Climate change, Security, Crisis management,...
- Co-funding of R&D activities (**Research & Innovation Actions - RIA**) and closer-to-the market activities (**Innovation Actions – IA**)
- Applicants must form a **consortium** (“Find a partner” services exist)
- EU contribution: from 70% (IAs) to 100% (RIAs) of eligible costs for SMEs
- Average EU contribution: €2-5 million per project
- Typical project duration: 2-3 years

Visit <https://ec.europa.eu/research/participants/portal>



The biggest EU R&D programme, SMEs are very welcome



Copernicus

GREEK ORGANISATIONS PARTICIPATE IN 11 H2020 EO-RELATED PROJECTS



A P O L L O





Copernicus

THE SME INSTRUMENT HELPS FROM BUSINESS PLAN ELABORATION TO IMPLEMENTATION



Initial Idea



Business plan



Marketable product



Commercialisation



Expansion

- Helps start-ups and scale-ups to engage in Space R&D and other Copernicus-related topics
- Different types of support depending on the concept maturity:
 - Finances business plan elaboration and provides business coaching (**Phase 1**)
 - Finances project implementation and provides business coaching (**Phase 2**)
 - Provides business coaching, training, mentorship and support to access risk finance (**Phase 3**)
- **Cut-offs** every quarter for Phase 1
- EU contribution: 70% of total eligible costs. Up to €50000 for Phase 1, between €0.5 – 2.5 million for Phase 2
- Typical project duration: from 6 months (Phase 1) up to 1-2 years (Phase 2)



Specifically designed for SMEs

Visit <http://ec.europa.eu/easme/en/horizons-2020-sme-instrument>



Copernicus

H2020 FTI PILOT HELPS IMPLEMENT CLOSE TO THE MARKET IDEAS



Initial idea



Business plan



Marketable product



Commercialisation



Expansion

- The H2020 “Fast Track to Innovation” (FTI) Pilot finances plans and arrangements or designs for **new, altered or improved products, processes or services**
- FTI targets products, processes or services to be commercialised **within 3 years** after the beginning of the FTI project
- Private companies, first-time industry applicants and **start-ups and scale-ups are particularly welcome** (allocation of min. 60% of the budget to industry participants)
- Applicants must form a **consortium** (“Find a partner” services exist).
- EU contribution: up to 70% for SMEs. Generally €1-2 million (can reach €3 million in justified cases)



Bottom-up with industry focus

Visit <https://ec.europa.eu/research/participants/portal>





Copernicus

ESA ARTES 20 co-finances projects combining several space assets



Initial idea



Business plan



Marketable product



Commercialisation



Expansion

- ARTES Integrated Applications Promotion programme (ARTES 20) funds **feasibility studies** and **demonstrations** of user-driven applications, combining at least two space assets (EO, GNSS, telecom)
- Two instruments: **open competitive tenders** (ITT) and continuous 2-stage **open calls for proposals** (outline proposal / full proposal)
- Applicants must come from the ESA member states and cooperating states participating in ARTES 20
- Applicants must form a consortium including at least a **service provider**
- ESA contribution: 100% for ITTs, 50% for calls for proposals (up to 100% for universities and research institutes)
- **But** Greece is not currently subscribed

Visit: <http://artes-apps.esa.int>



Gives access to ESA's technological expertise



Copernicus



- Support innovative projects to be commercialised **within 2 years** of project completion
- Address any technological area provided it has a **civilian purpose**
- Applicants must form a **consortium** (“Find a partner” services exist).
- The lead partner must be an **“R&D-performing SME”** originating from a Eurostars/EUREKA country
- Eurostars member countries **national funding rules and procedures** apply
- Typical project duration: 3 years
- But at this stage there is no public support for Greek organisations wishing to participate – They can participate but proving self-funding available – See <https://www.eurostars-eureka.eu/countries/greece>



**Specifically designed
for R&D-performing
SMEs**



Copernicus

GRANTS – KEY IS TO PREPARE AN EXCELLENT PROPOSAL

- Make sure that your project is fully in line with the Call objectives and the European Commission priorities:
 - Participate in the H2020 Info Days where you can consult it with EC representatives;
 - Seek for advice from your National Contact Point for EU Research Programmes.
- Start at least 6 months before deadline for proposal submission. Last minute proposals are bad proposals.
- Search if similar projects/products already exist and show how you make a difference.
- A strong consortium is key for success.
- Be concrete and clear in your proposal, evaluators are specialists from the industry, not EU robots!



**Build on excellence,
don't count on luck**



Copernicus

GRANTS – EVALUATION CRITERIA ARE YOUR BASELINE

1. Excellence – **Is your idea innovative enough?**

- Clarity and pertinence of the objectives
- Soundness of the concept, credibility of the proposed methodology
- Innovation potential and extent to which the proposed work goes beyond state of the art
- Interdisciplinary approaches and use of stakeholder knowledge

2. Impact – **How much it will fulfill the call objectives?**

- Contribution to the impacts mentioned in the work programme
- Any other impacts, that influence innovation capacity, market competitiveness and other important societal issues such as climate change or environment
- Quality of the proposed measures for exploitation and dissemination





Copernicus

GRANTS – EVALUATION CRITERIA ARE YOUR BASELINE

3. Quality and efficiency of the implementation – **How is your consortium built and managed?**

- Quality and effectiveness of the work plan, including planning of work effort
- Appropriateness of management structures and procedures, including risk and innovation management
- Necessary expertise of the team members
- Appropriate allocation of tasks to proper specialists

Success rate of H2020 proposals is about 15%

→ Only EXCELLENT proposals have a chance to win!





Debt financing



Copernicus

LOANS PROVIDE ESTABLISHED COMPANIES WITH RESOURCES FOR EXPANSION / WORKING CAPITAL



- A **business loan or debt financing** is the act of borrowing capital for use within a company
- The most common sources of debt financing are: bank loans, credit unions, independent business loan providers, and family & friends
- Debt financing requires **no equity being given up** by the business. Instead, loans are given on the basis of assets and collateral
- Mature SMEs with a **solid financial history and financial plan** are most likely to benefit from debt financing
- Visit European small business council (http://ec.europa.eu/small-business/finance/index_en.htm)

For established companies wanting to retain equity



Copernicus

CROWDLENDING IS AN ALTERNATIVE OPTION OF DEBT FINANCING



Initial Idea



Business plan



Marketable



Commercialisation



Expansion

- Debt crowdfunding is pitching to members of an online platform in order to allow individual lenders to combine resources for a loan to a company
- Crowdfunding works on an **all or nothing principal principle** whereby the company either receives the full loan or nothing
- The loan is a fixed amount and the **repayment term and interest rates are also fixed**
- Option for SMEs with an **established business and sound financial base** that have come into financial strife in terms of cashflow. Or, companies that need resources for expansion

Visit:

- Funding Circle (www.fundingcircle.com)
- Lending Club (www.lendingclub.com)

**Alternative to
traditional business
loans**



Copernicus

E I B I N T E R M E D I A T E D L O A N S E A S E A C C E S S T O D E B T F I N A N C E



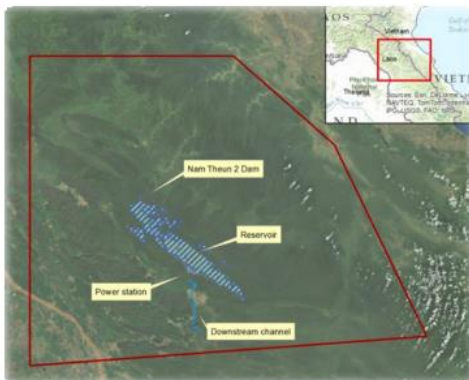
- The European Investment Bank (EIB) lends money at low rates to **financial intermediaries** (local partner banks) which subsequently on-lend them to beneficiaries
- EIB creates **leverage** by requesting these financial intermediaries match the funds provided by EIB loans with at least the same amount
- Loans are **flexible** in terms of size, duration and structure and depend on the financial intermediaries
- Interested start-ups and scale-ups need to contact their local financial intermediaries (list available on the EIB portal)
- Visit www.eib.org

**For projects below
€25 million**



Copernicus

EO services for EIB – Laos



○ CHALLENGE

- Difficult to monitor projects taking place in especially in remote developing countries

○ SOLUTION

- Use Earth Observation to establish baselines and monitoring of infrastructure and environment in the context of the Nam Theun (NT2) Hydropower Project in Lao PDR

○ EO SERVICES PROVIDED

- Forest and land cover mapping for environmental assessment
- Monitoring how much water is in the reservoir (relevant for energy forecasting)



Copernicus

EFSI PROVIDES PROJECT FINANCING IN KEY SECTORS FOR THE EUROPEAN ECONOMY



Initial idea



Business plan



Marketable product



Commercialisation



Expansion

- The European Fund for Strategic Investment (EFSI) provides **loans** for economically and technically viable projects which are mature enough to be bankable and priced in a manner commensurate with the risk taken
- EFSI focuses on sectors of key importance for the European economy (e.g. strategic infrastructures, renewable energy and resource efficiency)
- EFSI can cover up to 50% of the total cost for both public and private sector promoters, but on average this share is about 30-35%
- Visit www.eib.org/efsi

**For projects above
€25 million**



Copernicus

DEBT FINANCING – WHAT IS NEEDED TO APPLY FOR A LOAN FROM A BANK

These are some common requirements you will need you to fulfil across all banks, even though the specific conditions might differ:

- **Accounts Receivable**, a rundown on all your expected income that you are waiting to receive, ideally fixed by customer contracts.
- **Personal financial details**, a break down of your personal financial risks and outstanding debts and/or investments and possibly a credit check.
- **Insurance information**, a detailed list of all current insurance policies in the name of the company including what is covered.
- **Collateral**, a resalable asset (personal or company owned) or capital locked away with other investments that can be leveraged against.
- **A business plan**, detailing how the company is currently performing and how it is expected to perform throughout the period of the loan and beyond.
- **Thorough financial details**, a full break down on the company financials including assets and expected finances going forward.



Equity capital



Copernicus

EQUITY CROWDFUNDING ENABLES FUNDRAISING DIRECTLY FROM THE PUBLIC



- **Equity crowdfunding** is a pitch to members of an online platform in order to acquire capital, in return for shares in the start-up
- The crowdfunding campaign works on an **all or nothing principle** where by the company either receives the full target investment or not
- Only start-ups that are able to **quickly capture the imagination of investors** with an attractive campaign will be successful
- The campaign ends successfully with the start-up having the required level of funding followed by a (minimal) due diligence process

Alternative to traditional equity investors

Visit:

- Seedrs (www.seedrs.com) – largest European platform
- FunderNation (www.fundernation.eu) – German platform with Aerospace focus



Copernicus

BUSINESS ANGELS PROVIDE SMART CAPITAL FOR START-UPS IN THEIR SEED STAGE



- A **business angel** is a private investor with disposable income or wealth that provides seed capital for a start-up in exchange for equity
 - Angels typically look for scalable **start-ups which have the potential for generating high rates of return**
 - Angels often **invest locally and can be hard to identify**, but business angel networks or start-up events are a great start
 - Angels are known to be a source of **smart capital** due to their business acumen, sector knowledge and network they often bring to the table
-
- Visit:
 - European Business Angel Network (www.eban.org)
 - Space Angels Network (www.spaceangelsnetwork.com)

For smart capital



Copernicus

VENTURE CAPITAL PROVIDES THE FINANCIAL RESOURCES FOR RAPID GROWTH



Initial idea



Business plan



Marketable product



Commercialisation



Expansion

- **Venture capital (VC)** is financing in the form of private funding given to a start-up in exchange for equity
- VC invests only into start-ups which are deemed to have **high potential**, **address a significant market** and potentially offer **substantial return on investment** in the future
- The goal of a VC is to have their start-ups reach a stage where they are **ready for an exit (sale) within a few years**
- Any start-up reaching a point ready to go to market but requires a larger investment in order to progress through the growth stage can source funding from early-stage VC's

For high potential start-ups

Visit:

- Invest Europe (www.investeurope.eu) – Industry Association of Private Capital
- Seraphim Capital (www.seraphimcapital.co.uk) – Space Fund in UK



Copernicus

THE EU SUPPORTS THE FINANCING MARKET WITH COSME



Initial idea



Business plan



Marketable product



Commercialisation



Expansion

- Facilitates access to guarantees, **loans** and **equity capital** through selected financial intermediaries (local banks).
- The **Loan Guarantee Facility (LGF)** funds guarantees and counter-guarantees (up to €150000) – helping financial intermediaries to lease finance to start-ups and scale-ups.
- The **Equity Facility for Growth (EGF)** consists of investment in risk capital funds that provide venture capital and mezzanine finance to expansion and growth-stage SMEs.
- Specific conditions set by financial intermediaries.
- To benefit from COSME instruments, start-ups and scale-ups should contact their **local financial intermediaries**.
- Visit <http://ec.europa.eu/growth/smes/cosme>

Through financial intermediaries



Copernicus

EQUITY CAPITAL – PITCH DECK ESSENTIALS

The key to successful investment is a **great product** and an **even greater investor pitch**. This should be prepared for various different presentation lengths and containing the following:

- **Mission / vision statement** A clear one liner on what you do.
- **Description of company / product / service** How, what, when and why you solve your customers problems.
- **Market size** Realistically identify the size of your total market.
- **Unique Selling Proposition (USP) & Competition** Detail how do you differentiate from your competition and how you compare.
- **Marketing plan & market entry** Show clearly how you will break into the market and grow your revenue. Be sure to also outline barriers or risks.
- **Partners** Show partners and their involvement and advantages (with logos).
- **Financials** A full financial run down on the company including projections and with examples from already known brands.
- **Management team** A break down of everyone in the team and how they fit the project, also include any well known advisors.



Other
instruments



Copernicus

COMPETITIONS AND PRIZES ARE THE GLUE OF THE INNOVATION ECO-SYSTEM



Initial Idea



Business plan



Marketable product



Commercialisation



Expansion

- Competitions offer a **unique opportunity to showcase talent, ideas or even start-ups and companies**
- The object of the competition varies but normally involve submission of a business plan, detailed description of an idea or concept, or an actual product.
- Competitions are a **solid networking tool** and a **marketing and publicity instrument** for an individual, team or company.
- The result of winning a competition is **general exposure in the industry** and sometimes includes a non-monetary or monetary **prize**

Visit:

- Actin Space (www.actinspace.org)
- Copernicus Masters (www.copernicus-masters.com)
- Space App Camp (www.app-camp.eu)
- MyGEOSS (<http://digitalearthlab.jrc.ec.europa.eu/mygeoss/>)

**Best for networking
and gaining
recognition**



Copernicus

HORIZON PRIZES DRIVE GROUNDBREAKING INNOVATION



Initial idea



Business plan



Marketable product



Commercialisation



Expansion

- Horizon challenge prizes offer a **cash reward** to whoever can most effectively meet a defined challenge in different topics
- The aim is to find solutions to problems that matter to European citizens.
- All legal entities can apply: companies, organizations and natural persons
- EU Budget per prize: €0.5-3 million
- **EO-related challenges could be launched (2017-2019)**

Visit <https://ec.europa.eu/research/horizonprize>



Be the first one to crack the challenge



Copernicus

ACCELERATORS STIMULATE RAPID GROWTH IN PREPARATION FOR RISK CAPITAL



Initial Idea



Business plan



Marketable product



Commercialisation



Expansion

- An accelerator is an **intensive 3-6 month programme** with a batch of start-ups often active around a specific theme
- Designed to advance from concept stage to an idea or prototype ready for pitching to investors **during a demoday** at the end
- In exchange for the programme's support and a small financial investment, a **stake of equity in the start-up is often taken**
- Accelerators enable start-up founders to increase the focus on their business and to be driven without deterrence toward the end goal

Visit:

- Copernicus Accelerator (www.copernicus-masters.com)
- Climate – KIC Accelerator (www.climate-kic.org)
- SETquared Space Accelerator Hub (www.setsquared.co.uk)
- Space3ac (www.space3.ac)

For highly accelerated growth in seed stage



Copernicus

BUSINESS INCUBATORS FOSTER THE GROWTH OF YOUNG COMPANIES



Initial Idea



Business plan



Marketable product



Commercialisation



Expansion

- **Incubators** are work places where various companies are **located under one roof**
- Incubators support start-ups in the development of a business idea into a feasible and financially viable company
- Mentors and subject matter **experts are available to give advice** and can **help with establishing contacts** within their networks
- Ideal for start-ups without the financial opportunity and/or infrastructure to operate already alone as a business

Visit:

- ESA - Business Incubation Centres (www.esa.int)
- Surrey Space Incubator (www.surreyspaceincubator.co.uk)
- North East Space Incubation Programme (www.northeasttechnologypark.com)

**For businesses
needing
infrastructure &
business support**



Using satellite imagery in the sales process

Copernicus for entrepreneurs and developers





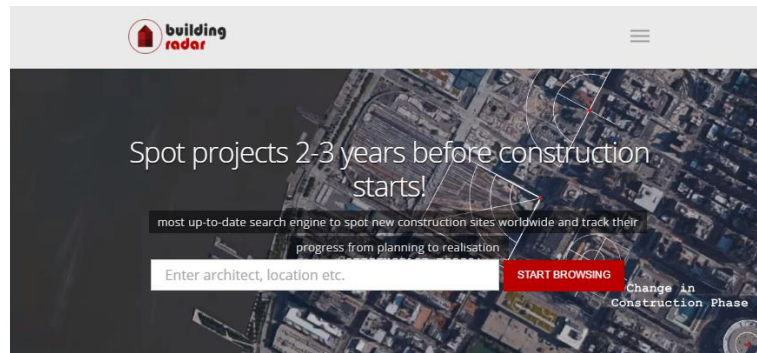
Copernicus

Who is Building Radar?

- Winner of 2015 ESA Space App Camp
- Winner of the 2015 Copernicus Masters – European Space Imaging High-Res Urban Challenge
- Currently at ESA Business Incubator Centre in Bavaria, Germany



© Anne Kreuz



© Building Radar



Copernicus

What do they do with Sentinel-2?

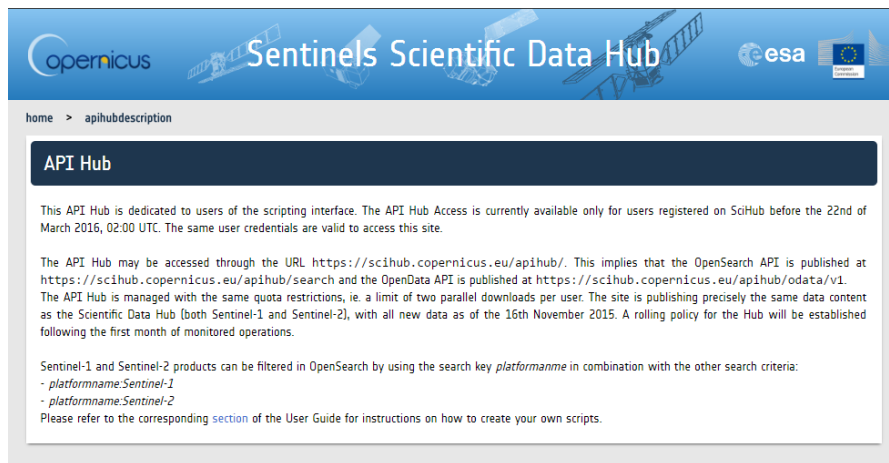
- Global database for new and ongoing construction projects
- Technical:
 - Earth Observation data, including Sentinel-2
 - Machine learning and data mining to identify new building projects
- Financial:
 - Subscription model with free trial



Copernicus

Tutorial

- What can you see on a free Sentinel-2 satellite image?
 - Full, free and open satellite imagery
 - 10 meter resolution
- How to do it in an operational environment?
 - Sentinel API Hub



The screenshot shows the 'Sentinels Scientific Data Hub' website. The header includes the Copernicus logo, the title 'Sentinels Scientific Data Hub', and logos for ESA and the European Commission. The breadcrumb trail is 'home > apihubdescription'. The main heading is 'API Hub'. The text below explains that the API Hub is a scripting interface available for registered users, with a limit of two parallel downloads per user. It provides URLs for the OpenSearch and OpenData APIs. It also lists search criteria for filtering Sentinel-1 and Sentinel-2 products by platform name.

home > apihubdescription

API Hub

This API Hub is dedicated to users of the scripting interface. The API Hub Access is currently available only for users registered on SciHub before the 22nd of March 2016, 02:00 UTC. The same user credentials are valid to access this site.

The API Hub may be accessed through the URL <https://scihub.copernicus.eu/apihub/>. This implies that the OpenSearch API is published at <https://scihub.copernicus.eu/apihub/search> and the OpenData API is published at <https://scihub.copernicus.eu/apihub/odata/v1>. The API Hub is managed with the same quota restrictions, ie. a limit of two parallel downloads per user. The site is publishing precisely the same data content as the Scientific Data Hub (both Sentinel-1 and Sentinel-2), with all new data as of the 16th November 2015. A rolling policy for the Hub will be established following the first month of monitored operations.

Sentinel-1 and Sentinel-2 products can be filtered in OpenSearch by using the search key *platformname* in combination with the other search criteria:

- `platformname:Sentinel-1`
- `platformname:Sentinel-2`

Please refer to the corresponding [section](#) of the User Guide for instructions on how to create your own scripts.



Copernicus

Step 1: Search for area of interest

- Culture Centre Stavros Niarchos Foundation

ΦΩΤΟΓΡΑΦΙΕΣ ΚΑΤΑΣΚΕΥΗΣ... X +

www.snfcc.org/construction/construction-photos/?lang=el

Αρχική > ΚΑΤΑΣΚΕΥΗ > ΦΩΤΟΓΡΑΦΙΕΣ ΚΑΤΑΣΚΕΥΗΣ

ΦΩΤΟΓΡΑΦΙΕΣ ΚΑΤΑΣΚΕΥΗΣ

ΣΕΠΤΕΜΒΡΙΟΣ 2016

| Δ | Τ | Τ | Π | Π | Σ | Κ |
|----|----|----|----|----|----|----|
| 29 | 30 | 31 | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 1 | 2 |

ΣΗΜΑΝΤΙΚΑ

ΕΚΔΗΛΩΣΕΙΣ & ΚΡΑΤΗΣΕΙΣ

Κέντρο Επισκεπτών

Κατασκευή τεχνητού λόφου

Φρέαρ Σκηνής

Ο Renzo Piano επισκέπεται το εργοτάξιο του ΚΠΙΣΝ



Copernicus

Step 2: download a time series

- Option A: Sentinels Scientific Data Hub – full images
 - Option B: USGS Earth Explorer
 - Option C: QGIS Semi-automatic Classification Plugin
 - Option D: Cloud
-
- Software used:
 - QGIS (OSGEO): <http://www.qgis.org/en/site/>
 - Amazon Web Services Command Line Interface
 - USGS Earth Explorer: <http://earthexplorer.usgs.gov/>
 - Sentinels Scientific Data Hub:
<https://scihub.copernicus.eu/dhus/#/home>



Copernicus

Option B: USGS EarthExplorer

The screenshot shows the USGS EarthExplorer web interface. The main page has a header with the USGS logo and navigation links. Below the header, there are tabs for 'Search Criteria', 'Data Sets', 'Additional Criteria', and 'Results'. The 'Search Criteria' tab is active, displaying instructions for entering search criteria. A 'Convert' dialog box is open in the foreground, showing options for converting a source (currently 'screen') to a video file. The dialog box includes fields for 'Source', 'Type', 'Settings', 'Profile', and 'Destination file'. The 'Convert' radio button is selected, and the 'Destination file' field contains the path 'C:\Users\Annekatrien\Videos\BuildingRadar_Step 1.mp4'. The 'Start' button is visible at the bottom of the dialog box. The background map shows a satellite view of a coastal area with a coordinate box indicating (51° 17' 21" N, 109° 51' 47" W).

1. Enter Search Criteria
To narrow your search area: type in an address or place name, enter coordinates or click the map to define your search area (for advanced map tools, view the [help documentation](#)), and/or choose a date range.

Address/Place Path/Row Feature Circle

Show Clear

Coordinates Predefined Area Shapefile KML

Degree/Minute/Second Decimal

No coordinates selected.

Use Map Add Coordinate Clear Coordinates

Date Range Result Options

Search from: mm/dd/yyyy to: mm/dd/yyyy

Search months: (all)

Convert dialog box details:
Source: screen
Type: screen
Settings: Map - Satellite
Convert (selected)
Display the output
Deinterlace
Profile: Video - H, 264 + MP3 (MP4)
Destination: C:\Users\Annekatrien\Videos\BuildingRadar_Step 1.mp4
Start Cancel



Copernicus

Option D: Cloud services

Google Earth

File Edit View Tools Add Help

Search

Kentrikos Tomeas Athinon, Greece Search

ex: NYC

Get Directions History

Places

- My Places
 - Sightseeing Tour
 - Make sure 3D Buildings layer is checked
 - Corinthia and Argolid
 - Corinthia and Argolid.kml
 - Corinthia and Argolid.kmz
 - S2A_OPER_GIP_TILPAR_201506...
 - Features
 - Legend: Single Symbol
 - Info
 - Temporary Places

Convert

Source

Source: screen://

Type: screen

Settings

Convert

Display the output

Deinterlace

Profile: Video - H.264 + MP3 (MP4)

Dump raw input

Destination

Destination file: Users\Annekatrinen\Videos\BuildingRadar_optionalStep1B.mp4 Browse

Start Cancel

Patras

Argos

ki Ellada ke lonio

Tripoli

Ermoupoli

Mansell Bank

Aegean Sea

Brooker Bank

Image Landsat
© 2016 Basarsoft
© 2018 Google
Data: SIO, NOAA, U.S. Navy, NGA, GEBCO

Google earth

Imagery Date: 1/1/1970 38°15'56.50" N 23°51'51.76" E elev 306 ft eye alt 213.44 mi

Search the web and Windows

2:00 PM
29-Sep-16



Copernicus

Step 3: Visualize an RGB image in QGIS

The screenshot shows the QGIS 2.12.3-Lyon interface. The main window displays a satellite image of a landscape with a river and fields. A 'Convert' dialog box is open in the foreground, showing the following settings:

- Source: screen://
- Type: screen
- Settings:
 - Convert
 - Display the output
 - Deinterlace
 - Profile: Video - H.264 + MP3 (MP4)
 - Dump raw input
- Destination:
 - Destination file: C:\Users\Annekatrien\Videos\BuildingRadar_step2.mp4

The dialog box has 'Start' and 'Cancel' buttons at the bottom.



Copernicus

Step 4: Time series



19/08/2016



IN SUMMARY...



- Αναζητήστε ευκαιρίες για την ανάπτυξη επιχειρηματικών ιδεών στα διάφορα χρηματοδικά μέσα
- Βεβαιωθείτε ότι απαντάτε σε αναγνωρισμένες ανάγκες σε νευραλγικούς τομείς της αγοράς και της κοινωνίας
- Σε συνδυασμό με την τεχνική αρτιότητα και καινοτομία είναι απαραίτητο να αναπτύξετε
 - εμπειριστατωμένο business+sustainability plan και
 - marketing/pitching skills
- Παρακολουθήστε τόσο τις τεχνολογικές όσο και τις policy-related εξελίξεις
- Δώστε έμφαση στο national and international, multi-stakeholder networking
- Αξιοποιήστε ημερίδες, workshops, conferences για να είστε ενημερωμένοι
- Μην διστάστε τη συμμετοχή σε start-up, accelerator, incubator, κτλ προγράμματα



FIND OUT MORE...



Copernicus

SUPPORTING PLATFORMS & NETWORKS

| | |
|--|---|
| <p>Enterprise Europe Network http://een.ec.europa.eu/</p> | <ul style="list-style-type: none">• Helps SMEs innovate and grow internationally• Provides business expertise |
| <p>EU Access to finance platform http://europa.eu/youreurope/business/funding-grants/access-to-finance/index_en.htm</p> | <ul style="list-style-type: none">• Provides an overview of EU• Helps SMEs to apply for loans and venture capital supported by EU |
| <p>H2020 R&I participant portal https://ec.europa.eu/research/participants/portal</p> | <ul style="list-style-type: none">• Entry point for applying for H2020 funding• Provides applicants with information and guidance on funding opportunities |
| <p>H2020 National Contact Points https://ec.europa.eu/research/participants/portal/desktop/en/support/national_contact_points.html</p> | <ul style="list-style-type: none">• At least 1 contact point per Member State• Provides guidance, practical information and assistance on all aspects of participation in Horizon 2020 |



Copernicus

SUPPORTING PLATFORMS & NETWORKS

| | |
|---|--|
| <p>Your Europe Business http://europa.eu/youreurope/business</p> | <ul style="list-style-type: none">• Provides practical information on doing business within Europe• Offers information on basic rights, how these rights are implemented in each individual |
| <p>European Investment Project Portal (EIPP) https://ec.europa.eu/eipp</p> | <ul style="list-style-type: none">• Brings together project promoters and investors• Addresses a wide range of areas (efficiency, transport, renewable energy...) |
| <p>European Investment Advisory Hub (EIAH) http://www.eib.org/eiah</p> | <ul style="list-style-type: none">• Provides project promoters, public authorities and private companies with access to a number of advisory and technical assistance programmes and initiatives |



Copernicus

SUPPORTING PLATFORMS & NETWORKS

| | |
|--|---|
| <p>European Assistance For Innovation Procurement (EAFIP) http://www.eafip.eu</p> | <ul style="list-style-type: none">• Promotes the benefits of innovation procurement• Provides training and assistance to public procurers |
| <p>Procurement Forum https://procurement-forum.eu</p> | <ul style="list-style-type: none">• Part of the “innovation platform”• Gives stakeholders a chance to exchange, connect and collaborate |
| <p>Eurostars National Project Coordinators (NPC) https://www.eurostars-eureka.eu/eurostars-countries/europe</p> | <ul style="list-style-type: none">• Provides guidance about the Eurostars application process• Informs about national funding rules and procedures |



Copernicus

FACTSHEETS AVAILABLE FOR DOWNLOAD



www.copernicus.eu/access-to-finance



BONUS...