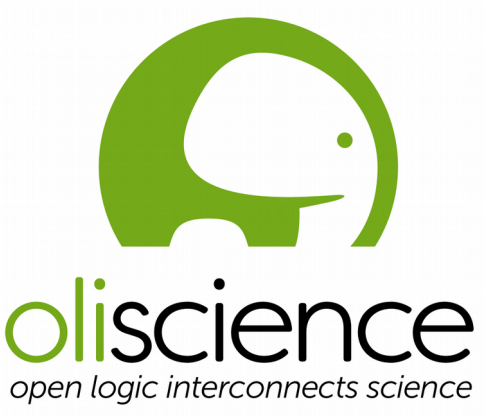


FPGA as a multidisciplinary tool for scientific research and industry

a practical example

Andrea Borga
digital design engineer and co-founder

Outlook

- Valorization
- Oliscience in a nutshell
- Consultancy customers
- OpenCores
- OpenCores premium partners

Valorisation

What is valorisation?

Valorisation is defined and applied in various ways.

Policymakers like the VSNU, Rathenau, Advisory Council for Science, Technology and Innovation (AWT), and NWO define 'valorisation' as follows:

'Valorisation is the process of creating value from knowledge, by making knowledge suitable and available for societal and/or economic application and by transforming it into products, services, processes and new business.'

http://www.ixa.nl/fileadmin/user_upload/Documenten/ValorisatiegidsVU-UvA_Web_ENG.pdf

About Oliscience BV

- Originating from the CERN-BIC at Nikhef

Nikhef

- Incubated at Amsterdam Centre for Entrepreneurship

- Based at the Amsterdam Science Park

Oliscience management team

- Alberto Alberton: (sales and marketing)
  - → experienced entrepreneur
  - → angel investor in oliscience
- Leo Davoli: (legal and operations)
  - → professional lawyer
  - → angel investor in oliscience
- Andrea Borga: (CEO and CTO)
  - → seasoned digital design engineer
  - → passionate technologist
  - → open source enthusiast
  - → the geek!

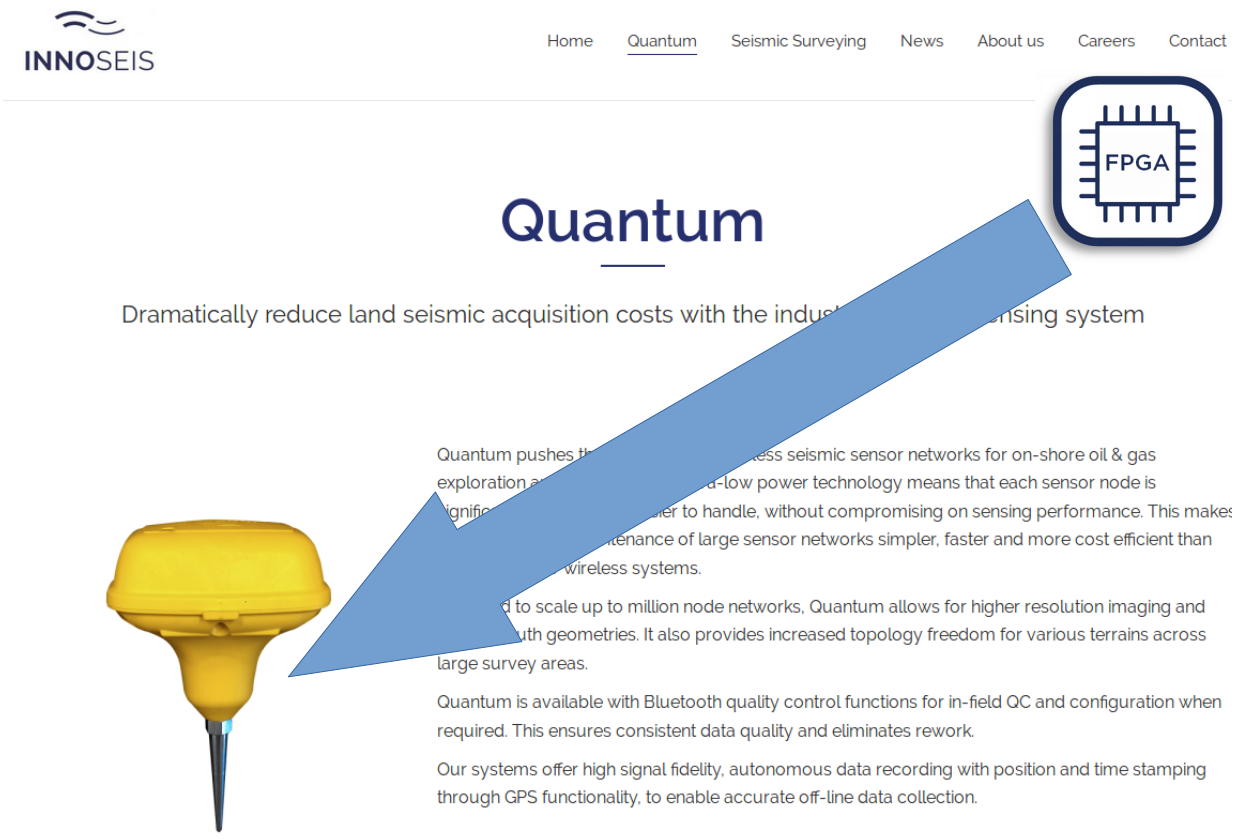
Oliscience in a nutshell

- Core business: FPGA technology
- Innovating in the field of FPGA
- Providing consultancy services
- Driving the OpenCores.org platform: community portal for the exchange of Free and Open Source IP Cores

Oliscience consultancy services

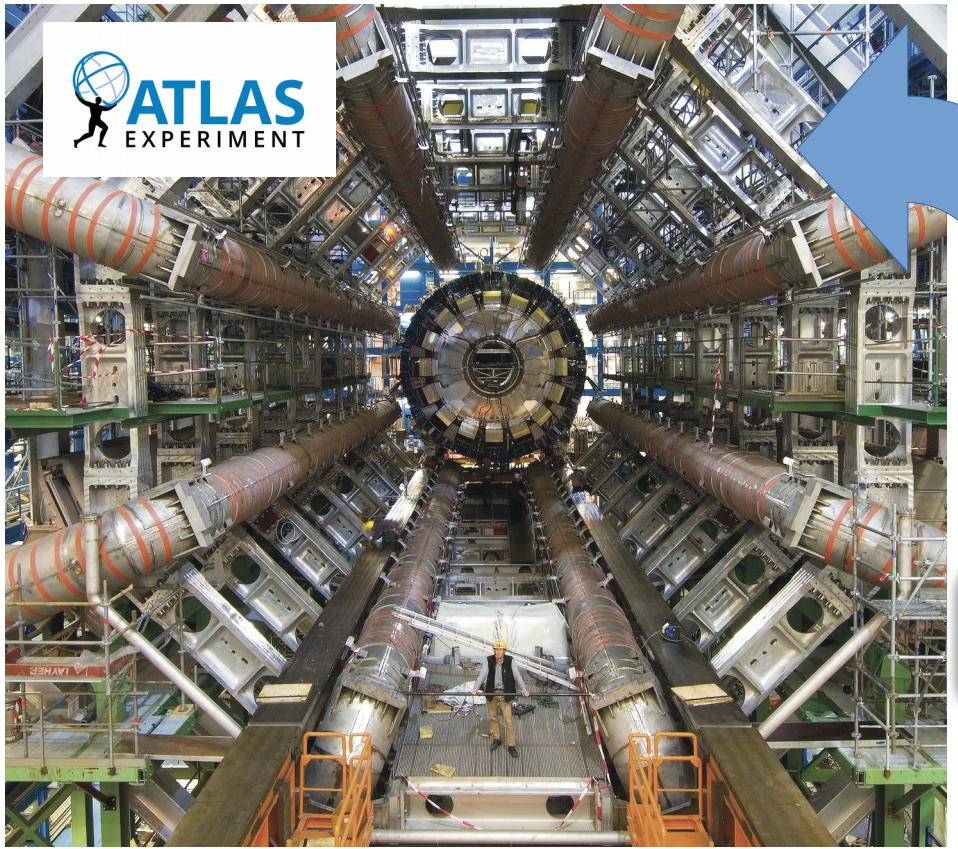
- In our **mission**:
  “Specialize in the design, streamline, documentation and long term support of gateware Intellectual Property (IP) Cores for FPGA.”
- If digital design is 30% coding + 70% verification and documentation… if anything else we tap into the “remaining” 70!

Consultancy customer

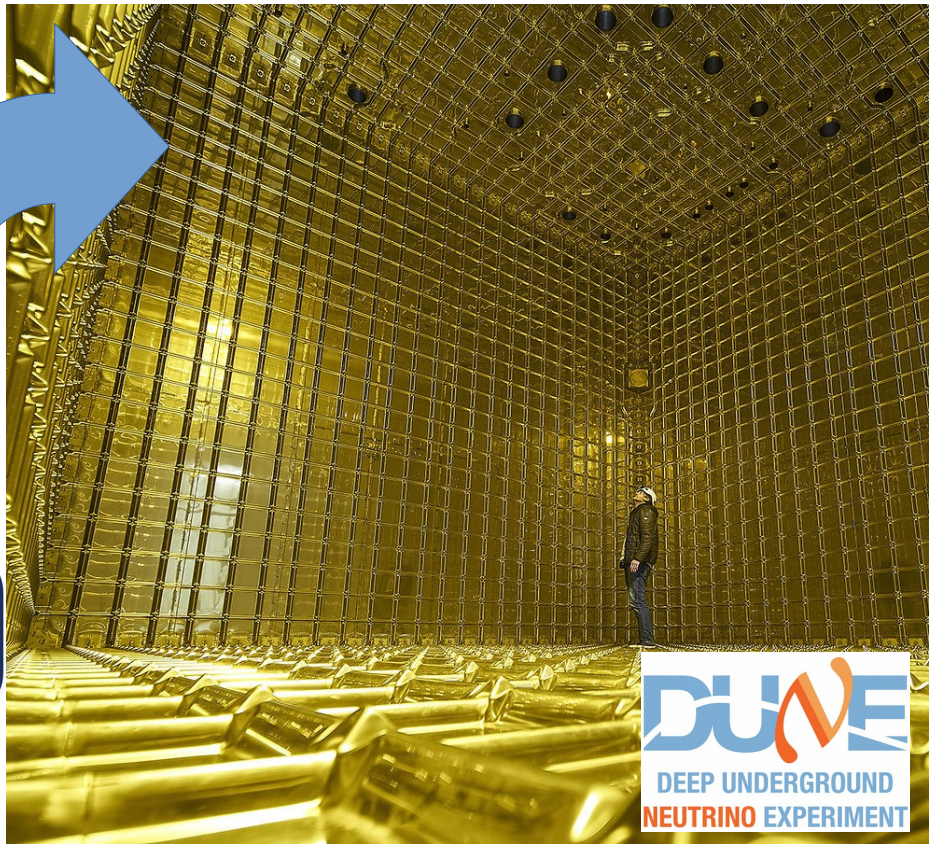


- Nasty bug...
- Analysed
- Advised how to pin point it
- Iterated
- Fixed the problem
- Advised on general design methodology

Consultancy customer



FPGA

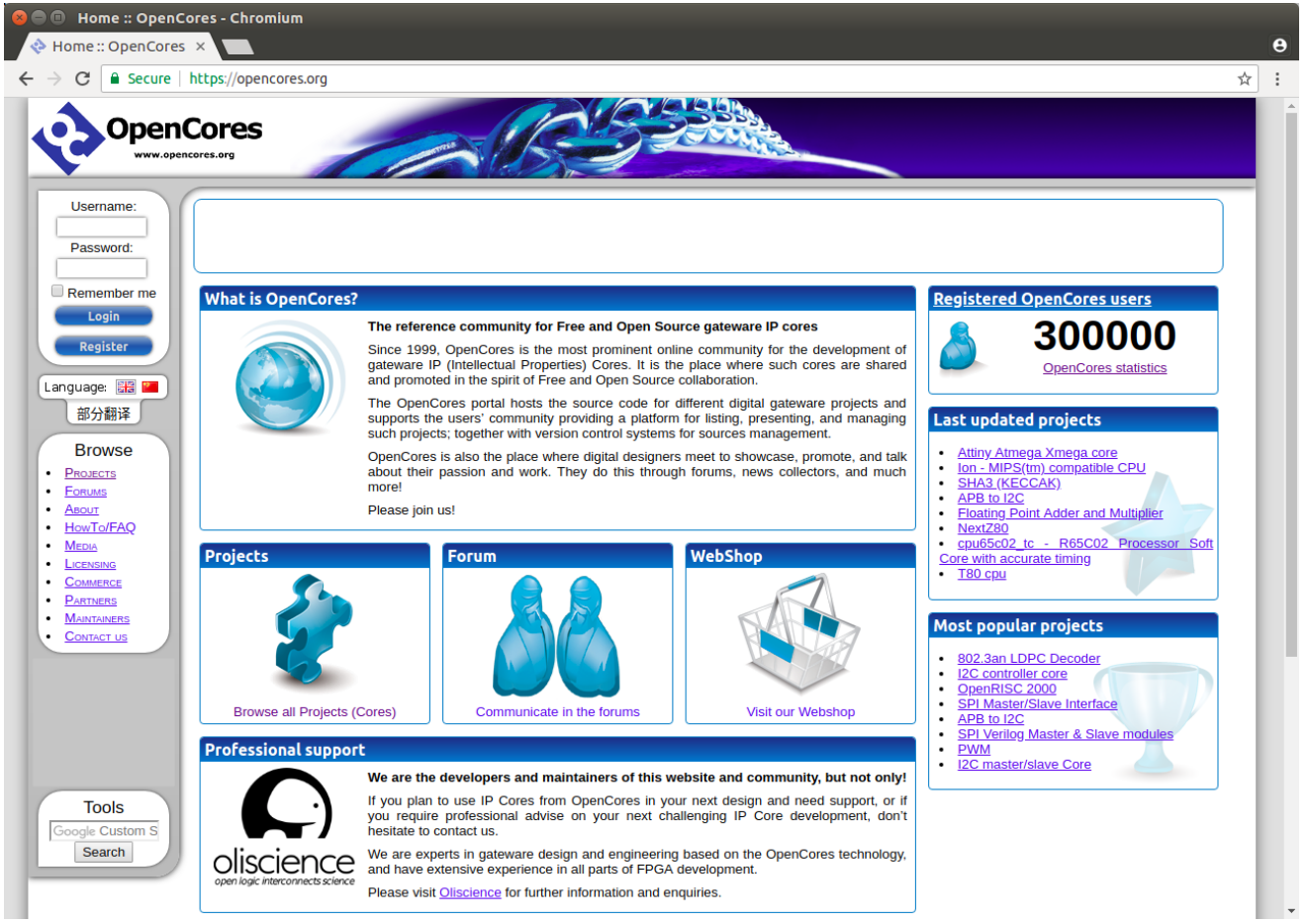


Open source culture

Share… why?

- Get the job done
- Avoid duplication effort
- Seeding of ideas
- Free peer review
- ***Sharing in the genes of scientific collaboration***
- A lot of testing done by third parties **(verification)**
- Promote common/good practices **(standardization)**
- Sharing often comes bidirectional

The “good old” OpenCores.org



OpenCores.org in numbers

- Made in Europe!
- Funded in 1999
- Frequented by >300.000 professionals
- Generating ~500.000 views per month
- **Acquired by Oliscience in 2017**
- Still strong identity, established trademark, consistent community, very specialized

OpenCores.org purpose

- OpenCores brings together Digital Design Engineers
- **make FPGA and gateware more accessible**
- **push!** ensure that the best IP Cores are used and let them be improved further by community
- **pull!** encourage more people to add IP Cores

Oliscience goals

- **Stimulate** the community
- **Offer** an “impact metrics” to asses performance
- **Motivate** designers to contribute
- **Steward** a forum for minds-alike to meet
- **Promote** best-in-class design practices
- **Support** our premium partners actively

A call to action to partners

<u>we</u> develop, drive and promote the large OpenCores community

consisting of:

- Research institutions
- Universities
- High-tech corporates

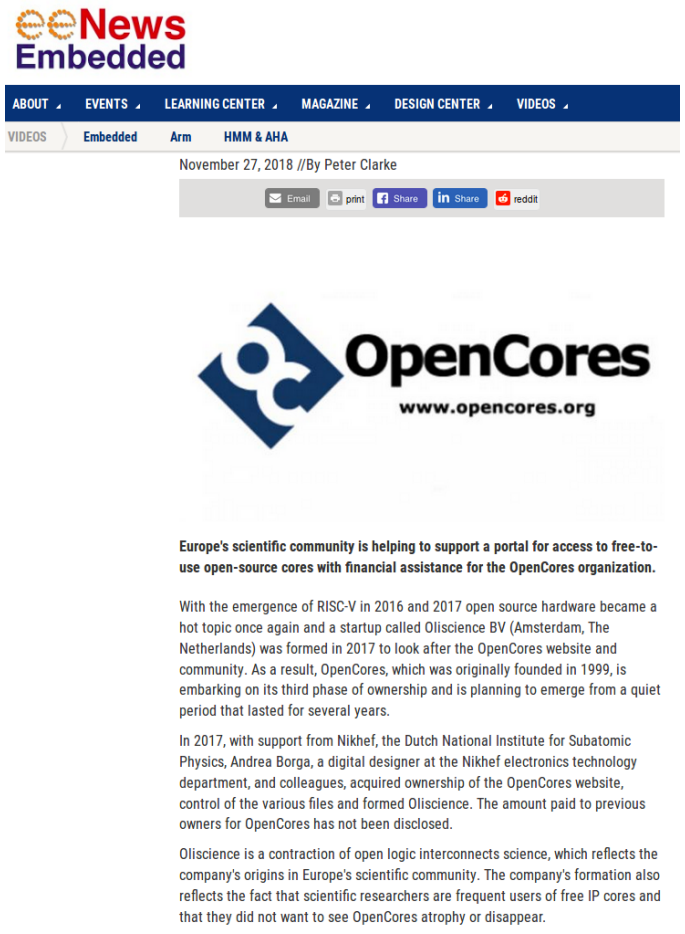
<u>you</u> access resources on our portal and contribute fostering common practices

Premium partner

ASTRON
Netherlands Institute for Radio Astronomy

"[…] **We are working on the opposite extremes of physics, but we are using the same technology**. This collaboration allows us to share ideas and reuse FPGA designs, which will help to speed-up the process of engineering the tools for science."- *Daniel Van der Schuur*

In the public domain



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November 27, 2018 //By Peter Clarke

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OpenCores
www.opencores.org

Europe's scientific community is helping to support a portal for access to free-to-use open-source cores with financial assistance for the OpenCores organization.

With the emergence of RISC-V in 2016 and 2017 open source hardware became a hot topic once again and a startup called Oliscience BV (Amsterdam, The Netherlands) was formed in 2017 to look after the OpenCores website and community. As a result, OpenCores, which was originally founded in 1999, is embarking on its third phase of ownership and is planning to emerge from a quiet period that lasted for several years.

In 2017, with support from Nikhef, the Dutch National Institute for Subatomic Physics, Andrea Borga, a digital designer at the Nikhef electronics technology department, and colleagues, acquired ownership of the OpenCores website, control of the various files and formed Oliscience. The amount paid to previous owners for OpenCores has not been disclosed.

Oliscience is a contraction of open logic interconnects science, which reflects the company's origins in Europe's scientific community. The company's formation also reflects the fact that scientific researchers are frequent users of free IP cores and that they did not want to see OpenCores atrophy or disappear.

- Open Cores rides again
- Honoured in OSDA program

Workshop on Open Source Design Automation (OSDA) 2019

held in conjunction with the Design, Automation and Test in Europe Conference (DATE)
Friday, March 29, 2019; Florence, Italy

Final Programme

Registration Link
Note: Please select "Friday Workshop W10"

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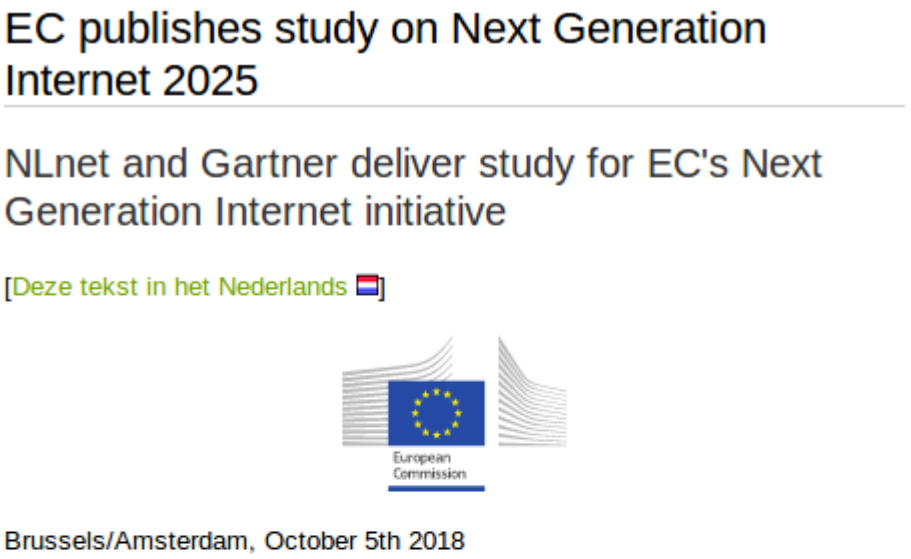
In the public domain

- Mentioned in a report for the EU Commission…



EC publishes study on Next Generation Internet 2025

NLnet and Gartner deliver study for EC's Next Generation Internet initiative

[Deze tekst in het Nederlands]

European Commission

Brussels/Amsterdam, October 5th 2018

https://nlnet.nl/news/2018/20181005-NGI-Study-Report-en.html

In the public domain

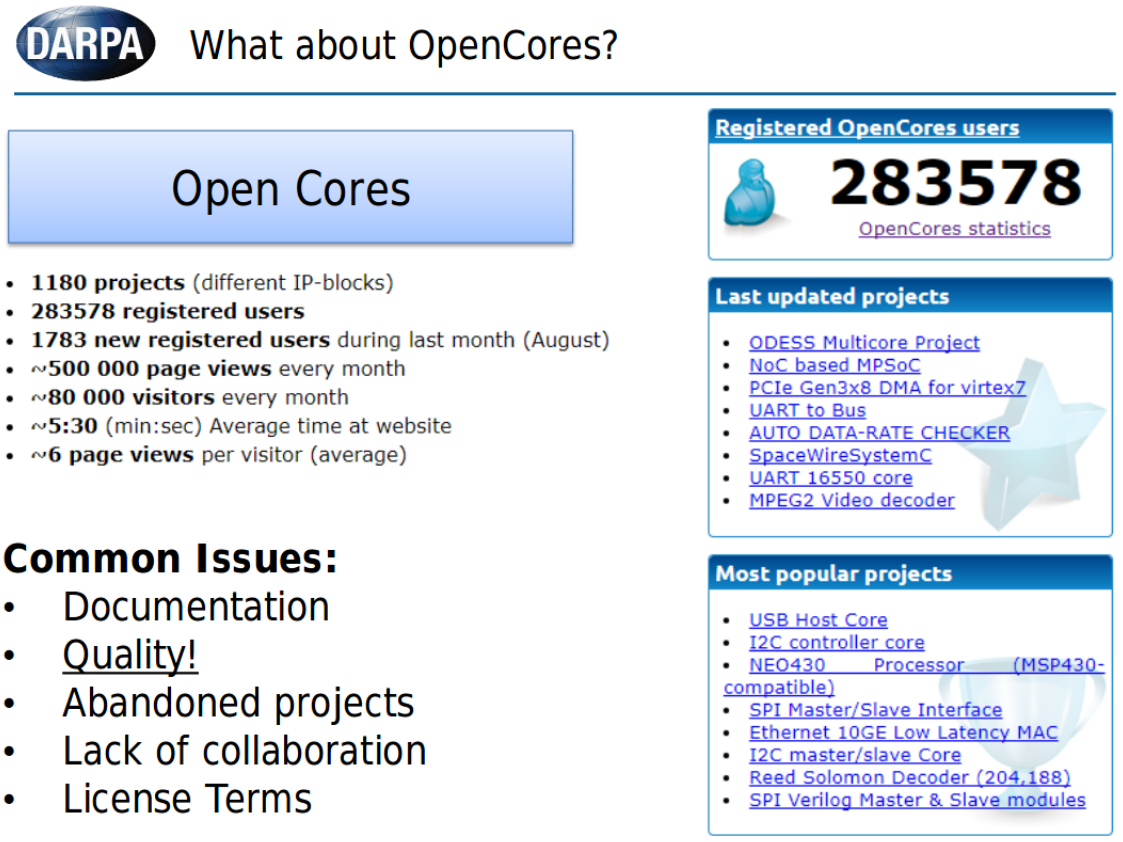
- Mentioned in a report for the European Commission (EC)...

EC publishes study on Next Generation Internet 2025

The European Commission's Directorate-General CNECT has published the much anticipated study "Next Generation Internet 2025", an in-depth analysis of the state of the internet performed by NLnet foundation and Gartner Europe. *"We believe that the Next Generation Internet initiative has actual potential to vastly improve the internet and change the current course of the internet"*, states Michiel Leenaars, director of Strategy at NLnet and leader of the study. *"The strategic topics we have identified in the report are essential to reach those goals"*.

In the public domain

- … and DARPA (US)



https://www.darpa.mil/attachments/eri_design_proposers_day.pdf

Thank you

+

www.opencores.org

www.oliscience.nl

LinkedIn: https://www.linkedin.com/company/oliscience/

Twitter: @Oliscience101