



2016 ANNUAL REPORT

Our Vision

THE Port is a Swiss non-profit organisation composed of a growing community of volunteering members, interdisciplinary participants, International Organisations, and private sponsors. We believe that this diversity is the key to our efficiency and what really makes us unique.

Uniting innovators

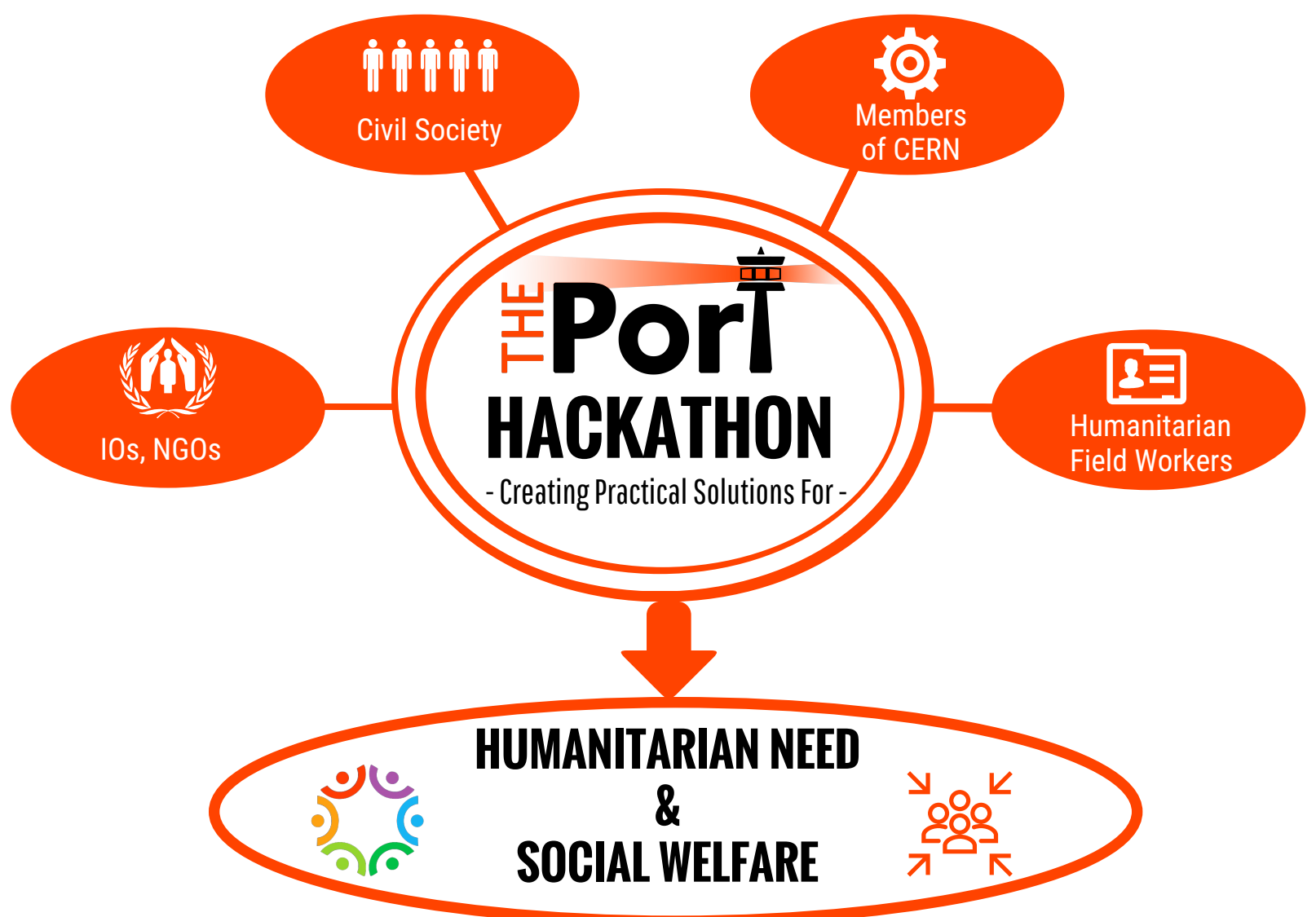
International teams of handpicked individuals, chosen for their unmatched level of expertise, come together to work on modern humanitarian challenges. Our projects embody state-of-the-art science, cutting-edge technology and endless fantasy.

Kickstarting solutions

During our flagship hackathon, or intense problem solving workshops, teams go from idea to prototype in under 60 hours. The resulting prototypes help improving societal conditions, and facilitating the daily tasks of humanitarian field workers.

Impacting the Future

Beyond its primary endeavor, THE Port initiatives also impact the future by fostering an ongoing dialogue between the global scientific community, public and the non-profit sector, which are still too rarely combined nowadays. This unique intellectual and practical exchange on uncommon ground opens new perspectives and leads the way towards further innovation, within a constantly evolving technological and humanitarian context.





A Word from the President

Welcome to THE Port's 2016 annual report! In three years, we have built up a solid reputation of quality in providing a platform in which global innovators can unite to create state-of-the-art technology for humanitarian need and social welfare. Our yearly signature hackathon has now become known for fast-tracking ideas into prototypes.

In this year's hackathon our teams have tackled eight new challenges covering various domains and providing concrete solutions for humanitarian field workers. A tool based on Machine Learning that assists the decision making of humanitarian analysts, as well as software detecting counterfeit drugs are among the variety of projects that we have kickstarted.

In parallel, we've also initiated new exciting side projects such as the Diplohack 2016, in February, a problem solving workshop aiming at creating new technological tools for human rights monitoring; and the Open Geneva Hackathon 2016, in April, centred on tackling modern health challenges with open data.

This May we also had the exceptional opportunity to showcase our activity on a major international stage, at the World Humanitarian Summit (WHS), in Istanbul, where we presented our unique model for curated hackathons and highlighted several prototypes created during our events. We were also proud to be joined by the e3e Monitor, an initiative developed during last year's hackathon, which showcased its own booth at the summit.

As new acting President, I am honoured to build upon the solid foundation that my predecessor, Ines Knäpper, and the founding members have established. In 2017, we plan to expand THE Port's activities by continuing to organise side events and by reinforcing the follow-up of all completed challenges. We also would like to transmit our "hackathon know-how" to inspire and support other organisations to host their own hacking events.

Finally, I would like to thank all participating organisations, sponsors, and volunteers that supported us during this year; as well as of course our main partner and host, CERN, for connecting us with its dynamic and innovative community.

Sylvain Kaufmann
President of THE Port



What makes us different

THE Port acts as a connector between humanitarian organisations and accomplished scientists, engineers and academics. We believe that the **interdisciplinary compounding** of knowledge leads to innovation. In order to achieve the highest quality possible, we go through a **rigorous selection of candidates** who will carry out specific challenges. The outcome is a one of its kind gathering of specialists that tackle modern humanitarian challenges by creating state-of-the-art technology.



FOR A BETTER
FUTURE

Selecting relevant challenges

Each year various IOs, UN-affiliated organisations and individuals from civil society are proposing challenges for which they are seeking solutions. Challenges typically consist in providing **tangible solutions** for humanitarian **field workers** and to societal need. It is a unique opportunity to work on a project from scratch to completion, in the most time and cost efficient way, and with the **highest possible quality** of output.

Shaping the challenges

The selected challenges are then carefully tailored through **intensive background research and close discussions** with the challenge setters and field workers in order to fit our feasibility and quality standards.

Selecting the right candidates

To achieve quality, we constitute **balanced teams in skills, age, gender and cultural background**. We also ensure that all participants are masters of their domains. We do not limit participation to specific fields of science and engineering. On the contrary, we believe that **interdisciplinary collaboration is the key** to our hackathons' success, and what truly makes them **unique**.

Shaping the teams

Successful candidates are connected with scientists and experts from CERN, and assigned to challenges in **interdisciplinary teams** of 8 to 10 people. The teams then work together online, during a six week preparatory period.

This thorough work procedure allows the challenges to be transformed into tangible prototypes in under three days during our signature hackathon in Geneva.



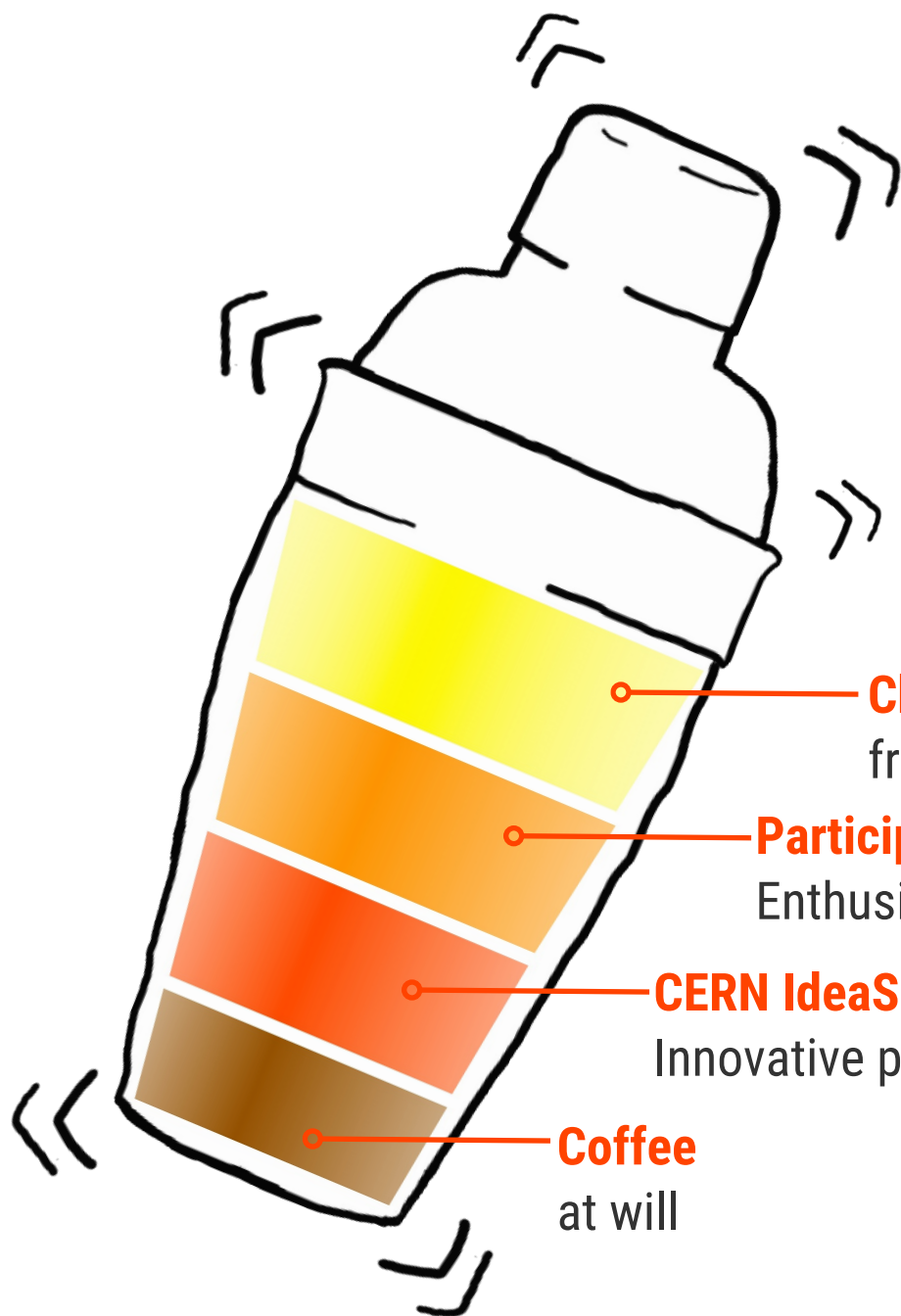
THE Port Hackathon Recipe

Since 2014

Over 30
challenges tackled

Over 20 IOs &
NGOs Collaborated

Over 400 hackathon
participants



1. Stir an Interdisciplinary mix of participants with the challenges.
2. Mature online for 6 weeks.
3. Energetically shake all ingredients for 3 days.

Challenges

from humanitarian need

Participants

Enthusiastic creative minds

CERN IdeaSquare

Innovative prototyping space

Coffee

at will

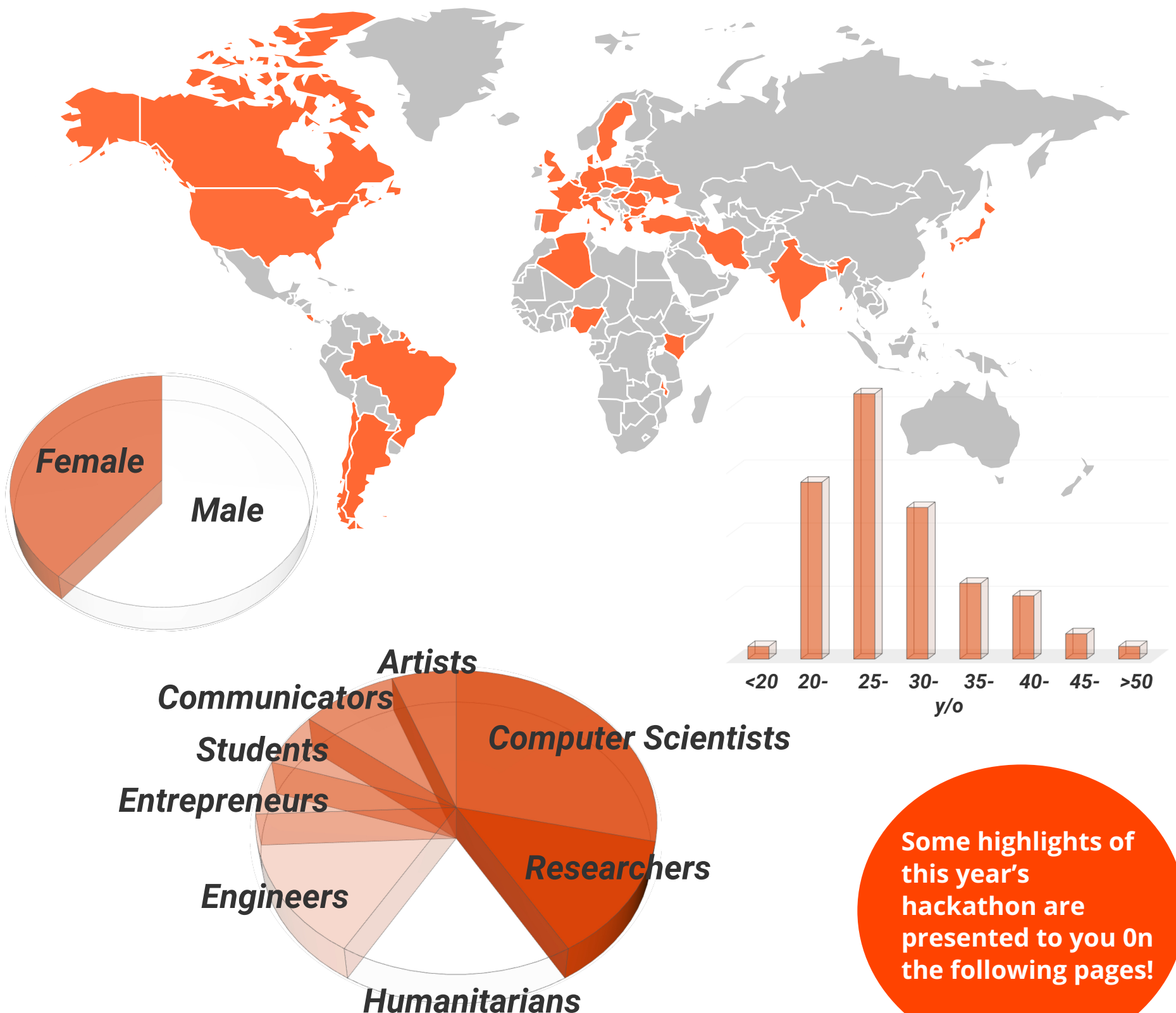
"I think it is safe to say that nowhere else will you see a particle physicist working with a mechanical engineer, a forensic specialist and a creative writer on the same project. The formula works. Each year our hackathons result in real prototypes responding to concrete need that otherwise could have taken years to develop." - A Former participant



THE Port Humanitarian Hackathon

14 - 16 October 2016

60 **Creative minds**
FROM ALL OVER THE WORLD,
AGE, GENDER AND DISCIPLINE



Some highlights of this year's hackathon are presented to you on the following pages!



2016 Challenges

Human Language Analyser

Every day thousands of people are exposed to violence, threats, coercion and insecurity as a result of armed conflicts, social instabilities or natural disasters. While many of these facts are covered by news reports, most of them remain invisible or not timely identified. Moreover, it is rare to get a comprehensive picture of those phenomena, which hinders appropriate interventions and evidence-based decisions.

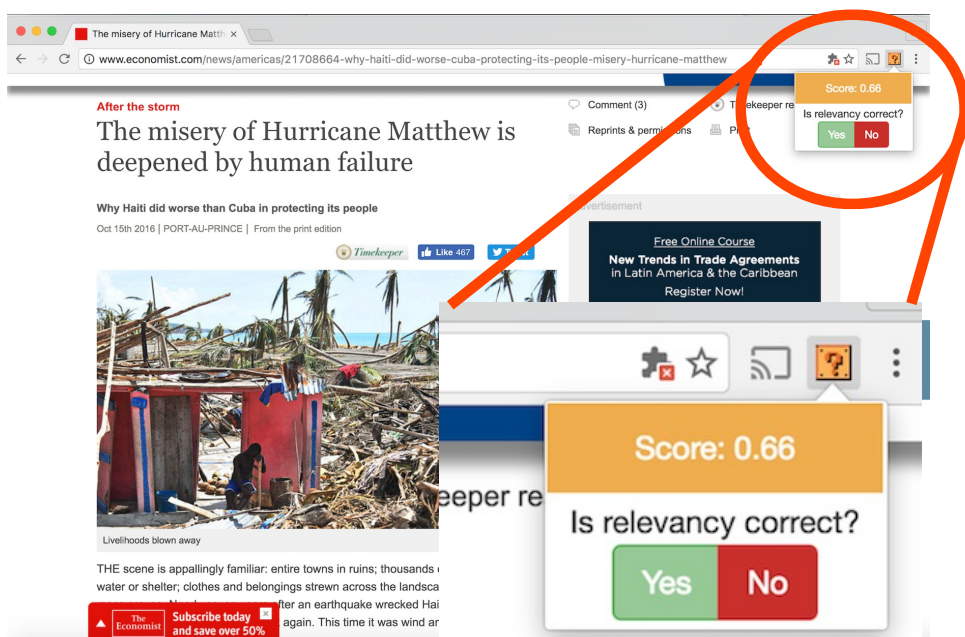
For this reason the idea emerged of developing a software tool that can mine crowd-generated open source data or field reports in order to support real-time monitoring and organisational decision making. Data is analysed by means of Natural Language Processing (NLP) and Machine Learning (ML) techniques.



Conceived at THE Port's 2016 Humanitarian Hackathon, the project evolved establishing a partnership with the IDMC (Internal Displacement Monitoring Centre), in Geneva, and the Humanitarian & Social Informatics Lab (HSIL) of the George Mason University (VA).

Recent Progress:

- A first version of the platform is being tested for the online monitoring of internal displacement emergencies.
- Application to other humanitarian issues, for example on gender-based violence, will be launched in 2017.
- Other Humanitarian Organisations have shown interest in supporting the project (e.g.: Global Humanitarian Lab).
- In the following stage the tool will allow for dedicated customisation in order to be used by different organisations for their specific needs.



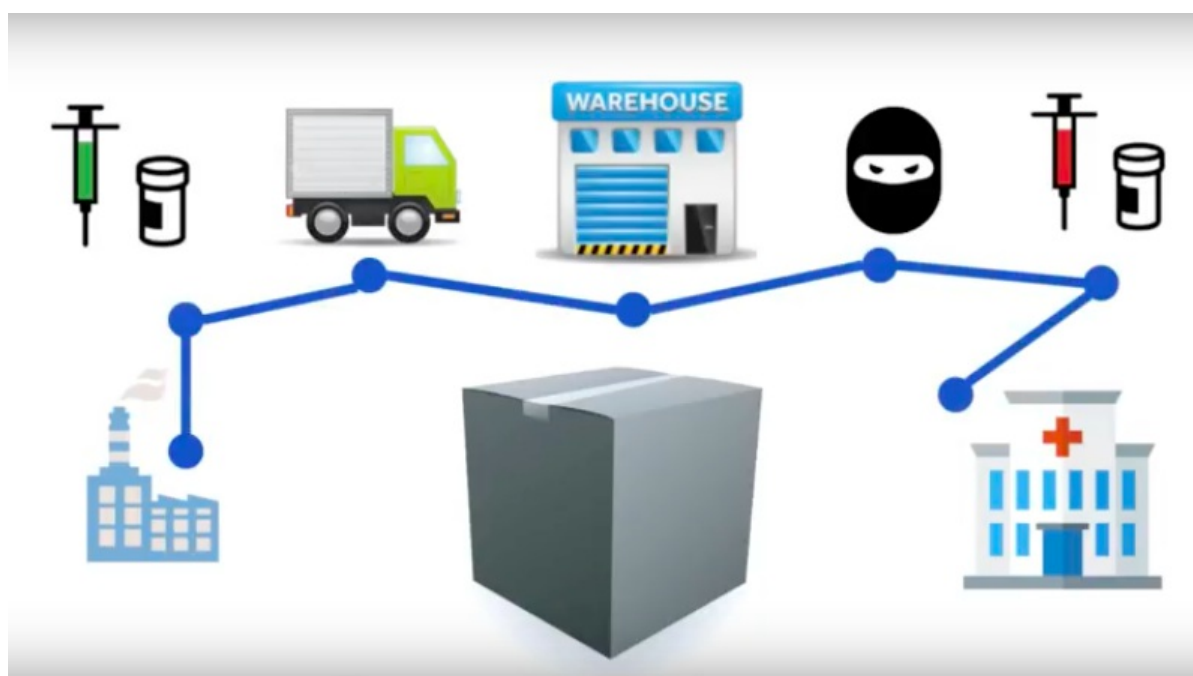
A web browser extension to show relevance score and to give a feedback



2016 Challenges

Counterfeit Drug Reduction

Medical supply chains in developing countries are often poorly monitored due to the lack of reliable and comprehensive data. This causes a decrease in public trust in medicine and vaccines and opens the door to fraud and waste that negatively impact patient's lives. According to the World Health Organisation, 120,000 people die every year as a result of fake anti-malaria drugs alone.



The team "ChainSafe" is creating an open and integrated platform for medical product monitoring using blockchain technologies that collect and share the information needed to detect fraud, reduce costs, and save lives. The platform would collect and relay data captured at every point in the drug and vaccine supply chain. This would include a stock database allowing the verification of storage facility levels, authentication of manufacturer accreditation, fast scanning of products at different checkpoints and tutorials and safety tips to educate consumers.



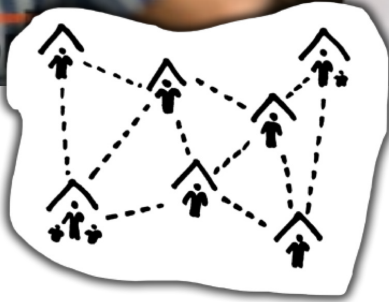
Conceived at THE Port's 2015 Hackathon, and further developed in 2016, ChainSafe's creators are seeking partnerships with global humanitarian and health organisations to implement a proof of concept of this innovative new platform in key countries.

More info:
<https://chainsafe.org>



2016 Challenges

Emergency Housing Networks



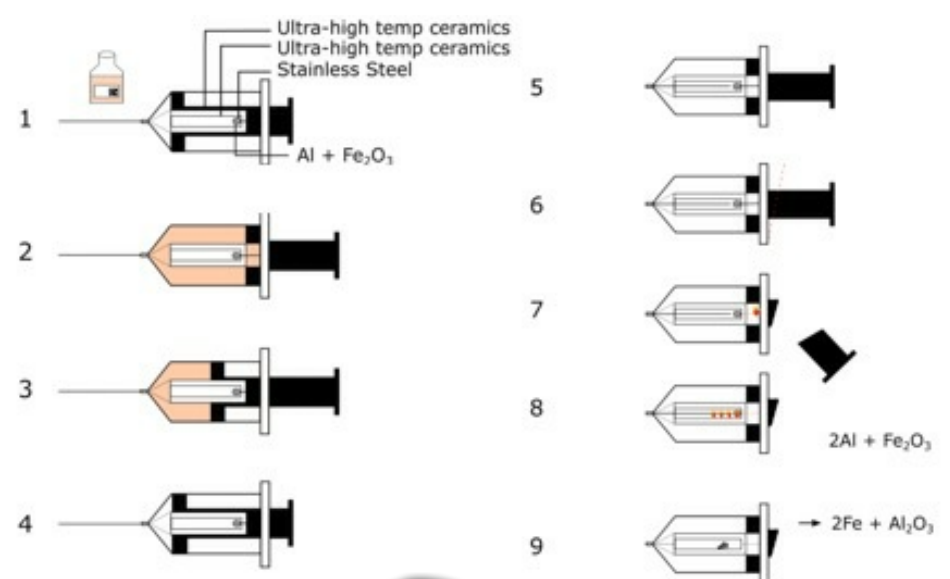
For decades, sheltering for refugees, displaced and disaster affected populations has been provided by tents or improvised shelters. These may be insufficient in number for the sheltering of large populations.

Team Pier 03 proposes a prototype for a smartphone app called Embrace that would empower communities to respond to disaster by matching a variety of needs, such as sheltering materials, with resources available in the local community. The app would build resilience in communities and allow self-reliance for families and individuals in vulnerable circumstances.

Field-ready Hospital Waste

In crisis situations it becomes difficult not only to supply hospitals but to dispose of the resulting medical waste. Improper disposal of sharps, or any needles that could cause puncturing, may increase the risk of unintentional injury and infection for patients, health workers and members of the community.

Team Pier 85 proposes safe, low energy, logistically simple and efficient methods of managing and disposing of waste in crisis environments. This includes a self-destructing syringe to prevent re-use as well as eye-catching labels marking bins for collection, transport and disposal of these materials. Such methods would significantly reduce human risk for field workers and local communities.





2016 Challenges



Efficient Forensic Photos

After natural disasters with thousands of victims, dead bodies are often burned or buried without proper identification. This causes additional pain to relatives and also creates difficult legal and financial situations.

Team Pier 37 proposes a Portable Photo Studio (POPS) to provide an adaptable, low-cost and compact set of tools to help take pictures of forensic evidence faster and more easily. Future improvements to the prototype would include automated matching of forensic pictures against pictures provided by family members as well as auto-annotation of images with a detailed text description of body characteristics. These methods would expedite and improve the documentation process and would leave fewer families in distress.

Clean and Mobile Elimination of Explosives

Explosives are a risk to public health, not only due to their destructive nature, but also due to long term toxic environmental contamination. Open burning and detonation of explosives doesn't eliminate all toxic remnants. New technological developments and optimized disposal procedures bring affordable, mobile and ecological elimination methods into reach.

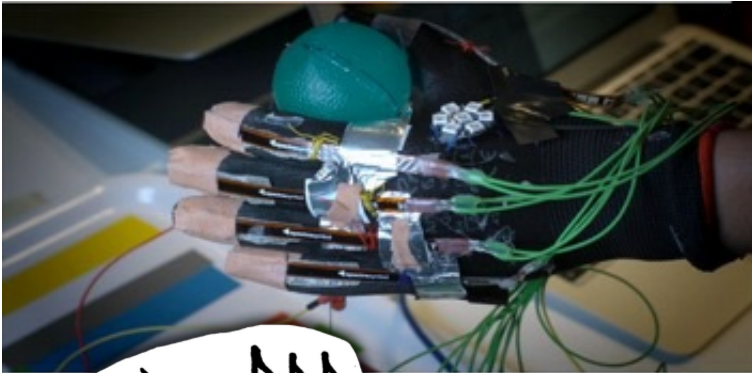
Team Pier 96 built a promising prototype that demonstrates the possibility of releasing the energy produced by explosives in a controlled way. TNT in explosive remnants of war would be eliminated with controlled burning, while allowing for the energy to be recycled for heating and other purposes. This would reduce environmental damage and increase security for post-conflict societies and other at-risk populations.





2016 Challenges

Sonification and Gamification of Physiotherapy



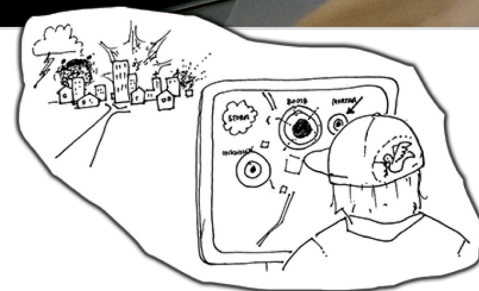
Movement is fundamental to our functionality as independent individuals and as part of society. Physiotherapy is therefore one of the most powerful tools to maintain and improve health, wellbeing and quality of life.

Team Pier 58 proposes a prototype called SoPhy, a sensory glove and HaPhy, a smart ball that provides haptic feedback. Those devices enable to quantitatively track finger movements to provide information to therapists and patients on movement proficiency. The collected information is also used to create acoustic feedback through sonification, guiding the user with music. The experience is engaging and enjoyable and can be shared with others through computer networks to reduce social isolation. The feedback through sound also enables people to receive physiotherapy in remote areas, and for physiotherapists around the world to track their progress.

Real-time Monitor of Explosions

The constant occurrence of explosions, especially in urban areas, is a harsh reality in certain parts of the world. Today, determining the nature and extent of destruction remains limited to eye witness accounts and official statements. The e3e Monitor would increase accountability by permitting real-time monitoring of explosions and other extreme energy events on an entirely objective basis.

In the team's long-term vision, the e3e Monitor technology and networks would be part of the essential infrastructure of every urban environment. e3e is now in its 3rd year of development and has been substantially built upon during THE Port Hackathon 2016.





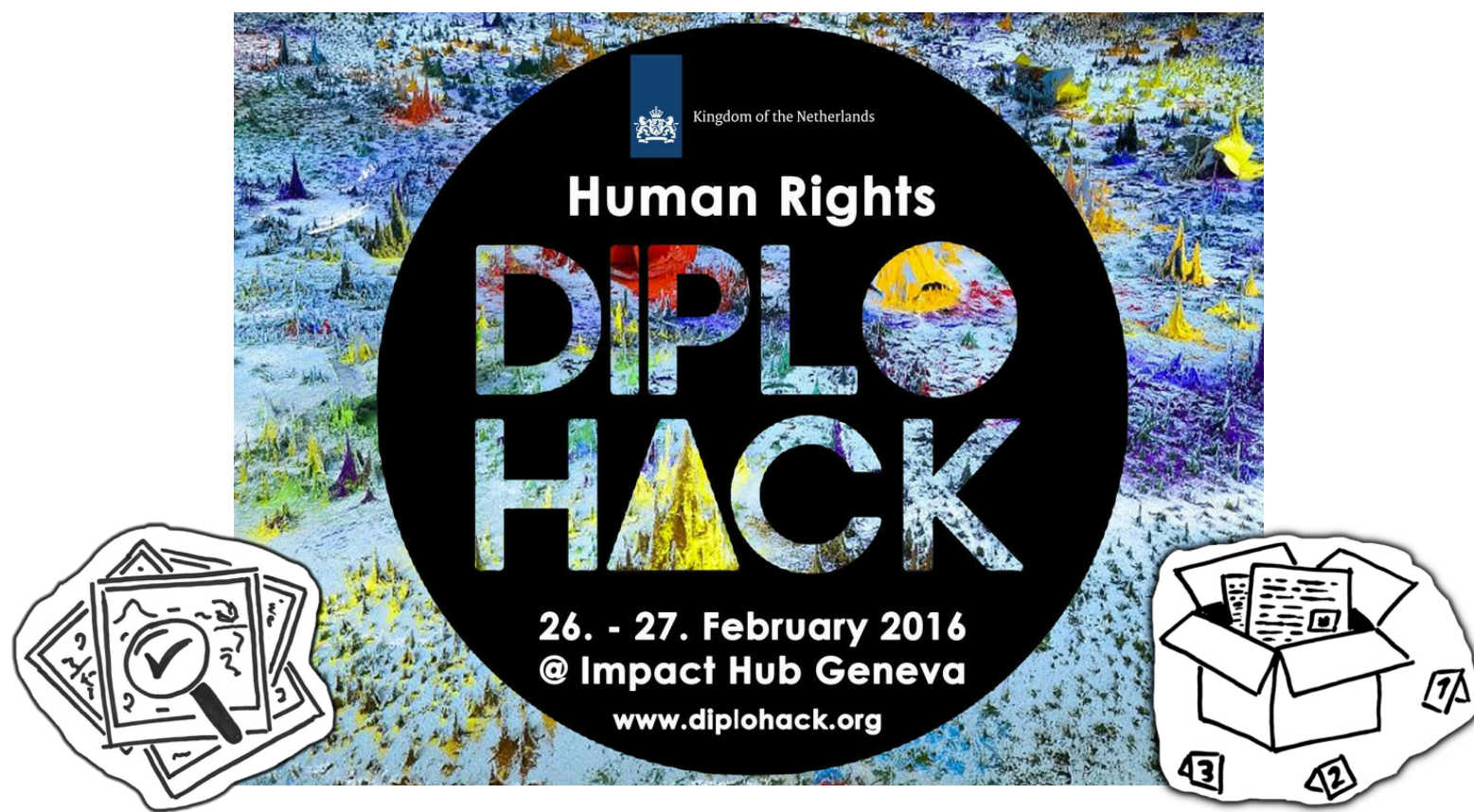
2016 Co-organised event

DiploHack

26 -27 February at Impact Hub Geneva

Scientists, human rights experts, diplomats and Ambassadors to the UN joined forces for a 48-hour period to tackle two challenges presented by the Office of the High Commissioner for Human Rights (OHCHR): the creation of automated tools for the analysis of photo and video content, and the development of methods of evidence collection in the field.

Several technological opportunities were proposed, including a machine learning algorithm that would analyse photo and video content for information on the occurrence of human rights violations. Results were presented at a high-level side event of the 31st Human Rights Council to the Netherlands' Minister of Foreign Affairs and Deputy High Commissioner of OHCHR



"Coming from the world of diplomacy, my ideas and proposals were tested against the brains of scientists and activists" – Fast track participant "

"Human Rights 2.0. This small group of individuals hacked into the future where rights are respected. Never forget, always share and act in solidarity." - Kate Gilmore, United Nations Deputy High Commissioner for Human Rights

The event was co-organised by THE Port, Impact Hub Geneva and the Dutch Government.
For more info: <http://theport.ch/home/diplohack-2016-impact-hub/>

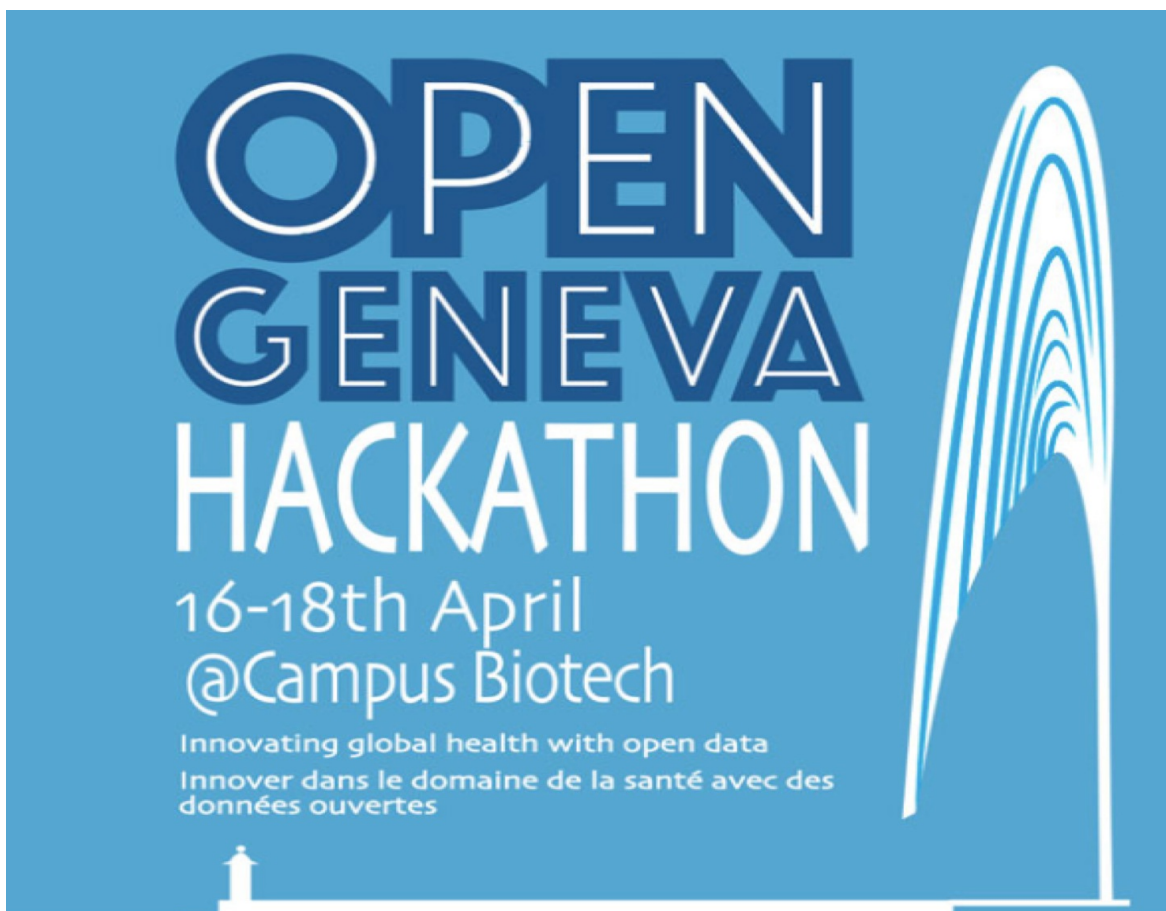


2016 Co-organised event

Open Geneva Hackathon 16-18 April at Campus Biotech

"Innovating global health with open data."

Participants from different backgrounds and age-groups joined forces for a 60-hour period to tackle six challenges relating to open data and health issues that directly impact people's lives.



Challenges were:

- Navigation for People with Visual Impairment
- Forecasting Emergencies
- On-line Hospital Registration
- Health Data Collection and Handling
- Preventing Suicide by Tech-Assisted Means
- Sensor Sock for Babies with Clubfoot.



Results were presented during the 2016 Geneva Health Forum as well as during the Journée SITG, just after the hackathon.

For more info: <http://theport.ch/home/open-geneva-2016-campus-biotech/>



2016 Milestone event

World Humanitarian Summit 23-24 May in Istanbul, Turkey

In 2012, UN Secretary General Ban Ki-moon established a five-year action plan and announced the creation of a summit “to help share knowledge and establish common best practices.”

The 2016 summit, organised by the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), convened 9,000 participants from around the globe to support a new shared agenda: the reduction and prevention of human suffering. During the summit, more than a dozen new partnerships were struck and over 3000 commitments were made to turn this agenda into meaningful reality.

THE Port was selected to have a booth at the summit’s “Innovation Market Place”, where our unique model for curated hackathons was presented and several prototypes created during our events were showcased. The featured prototypes included: a tracking and demarcation system for dogs in rescue and de-mining operations, a sensor sock for babies with club foot, enhanced tear-resistant food bags able to sustain air dropping and the model for a new generation of body bags that would improve the preservation rate of the deceased and positively impact forensic efforts.



The e3e Monitor, an initiative developed during THE Port’s 2015 & 2016 hackathon, was also selected to showcase its own booth at the summit.

For more info <https://www.worldhumanitariansummit.org/>



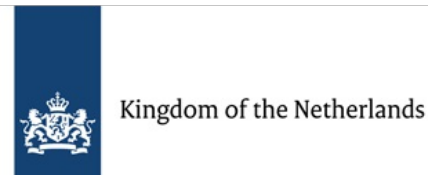
Financials

Balance 2016

	REVENUE	EXPENSES
Balance at 01/01/2016	CHF 5,723.50	
Membership Fee	CHF 2,764.00	
Challenge Contributions	CHF 191,669.38	
Consultation	CHF 180.00	
Credit provided by individuals	CHF 24,809.97	
Transport		CHF 1,963.33
Communication		CHF 15,872.35
Office Material		CHF 1,791.26
Infrastructure		CHF 1,917.69
Prototyping		CHF 10,406.03
Catering		CHF 33,211.95
Event Costs		CHF 13,622.95
Bank Costs		CHF 134.20
Travel		CHF 4,880.52
Accommodation		CHF 850.60
Salary Costs		CHF 4,660.80
Travel Grant		CHF 3,753.96
Salary		CHF 63,023.70
Reimbursements from 2015		CHF 1,226.52
TOTAL	CHF 225,146.85	CHF 157,315.86
DIFFERENCE	CHF 67,830.99	



Partner & Sponsors





Our team



THE Port Hackathon Organisers / Coaches / Volunteers

Cristina Bahamonde / Hugo Day / Karola Dette / Silvestro Di Luise / Daniel Dobos / Pierre Freyermuth / Clement Helsen / Stefania Imperia / Agnes Jakab / Michael Kagan / Sylvain Kaufmann / Oliver Keller / Joona Kurikka / Ines Knäpper / Thomas Maillart / Luisa Meneghetti / Leonardo Milano / Tomoko Muranaka / Iulia Pascu / Joao Pequeno / Estel Perez / Stephan Petit / Karolos Potamianos / Juliet Primo / Braislav Ristic / Frederic Sauzet / Hansdieter Schweiger / Bruno Silva / Vojtech Simetka

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