



SLOVAK CENTRE OF SCIENTIFIC AND  
TECHNICAL INFORMATION

**SOCIETAL AND ENVIRONMENTAL  
CHALLENGES IN THE FIELD OF INNOVATION  
AND TECHNOLOGY**

MAY 22, 2018, 9AM, BRATISLAVA, SLOVAKIA

## PROGRAMME

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09:00 - 09:30	Registration and coffee
09:30 - 09:45	WELCOME Slovak Centre of Scientific and Technical Information
09:45 - 10:15	KEYNOTE AND INSPIRATIONAL SPEECH <b>Radoslav Mizera</b> (Solved -The Cleantech Company Ltd) <b>Veronika Hliničanová</b> (ITUD - Interactive Tool for Urban Design)
10:15 - 11:00	MODERATED PANEL DISCUSSION <b>Responsibility in innovation and entrepreneurship – option or obligation?</b> <ul style="list-style-type: none"><li>• Why is important to make business more responsible and innovative?</li><li>• How to motivate entrepreneurs provide services and manufacture products which improve the system and environment around us?</li><li>• How can responsible business and innovations tackle social problems which are threatening Europe's future?</li></ul> <b>Alexandra Bitušiková</b> (University of Matej Bel in Banská Bystrica) <b>Radoslav Mizera</b> (Solved Finland) <b>David Pap</b> (FabLab Budapest) Moderator: <b>Ivana Raslavská</b> (SCSTI Slovakia)
11:00 - 11:20	Coffee break
11:20 - 13:00	<b>PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS</b> <b>JURY</b> <b>David Szedely</b> - CFO at Neulogy Ventures <b>Richard Fekete</b> - senior specialist at Slovenská sporiteľňa - Erste Group <b>Slavomír Hruška</b> - Investment Manager at Investeers
13:00 - 14:00	LUNCH
14:00 - 16:00	

### ROOM 1

#### WORKSHOP “Ecologically responsible innovations”

Workshop aims to: support the learning process in the Danube region; contribute to knowledge exchange of stakeholders as well as the general public; and support development of communities in the Danube region that will have positive impact on environment and energy saving.

### ROOM 2

#### WORKSHOP HubIT “Technology with and for society”

The aim of the workshop is to boost collaboration between ICT and SSH<sup>1</sup> communities. Additionally the event provides an opportunity to get acquainted with the HubIT<sup>2</sup> project, its outputs and tools, the ways to apply them and their added value for ICT related research, development and innovation. The

The workshop presents in the same time an inspiration how to eco-innovate by an inventor and researcher; an experience sharing by an implementer; and a debate on improving the communication strategies and thus increasing the impact of environmentally responsible ideas, research and entrepreneurship. The workshops is an integral part of the Ecolnn Danube project, implemented under Danube Transnational Programme, which brings together the eco-innovative community in the Danube region under ecoinnovative.eu platform. Speakers and workshop leaders:

- Think “eco”, when you innovate! **Andrea Pitzschke - inventor and researcher, Economica Austria**

- Energy is consumed by people not buildings, **Niko Natek – Energy consultant, KSSENA Slovenia**

- How to increase impact and relevance of your eco – innovative ideas and business?, **Veronika Dugovičová, National Contact Point Horizon 2020, Climate action and Energy, SCSTI, Slovakia**

**Moderated by Ivana Raslavská, SCSTI Slovakia**

Refreshments provided during

event also strives to gather feedback on the tools presented, in order to tailor them better to the needs of future users. The National workshop of the Horizon2020 project “HubIT” aims at bringing together and creating synergies between the ICT community, SSH researchers, public sector, policy makers and other stakeholders. It will also feature ways of becoming an „RRI<sup>3</sup>-proved“ ICT project/initiative/business and describing the main drivers and added value for the actors to follow an RRI approach. Workshop agenda:

- Presentation of the HubIT project and RRI definition, **Danica Dúbrava Víznerová, Project manager, SCSTI, Slovakia**

- Introduction of the European Framework Model of responsible ICT innovation and the assistance it offers, **Gabriela Mezeiová, Researcher, SCSTI, Slovakia**

- World café: How to make collaboration of ICT with SSH possible? **World café group discussions**

- Living library - sharing inspirational stories Interactive Tool for Urban Design - **Igor Hianik & Nikola Winková, IN ARCHITEKTI**; SoundCity Project MONICA – **Roman Behúl, ATOS**; Project Newton - **Radoslav Vargic, Slovak University of Technology in Bratislava**

- Moderated discussion on how to become an „RRI - proved“ ICT project/initiative/business. **Moderated by Martin Vlachynský, PEDAL Consulting**

- Wrap - up session

**Conclusions and recommendations**

Refreshments provided during the workshop.

16:00 - 17:00

## **BEST PROTOTYPE ANNOUNCEMENT (Moderated) WRAP UP AND FEEDBACK**

1 SSH - Social Sciences and Humanities / 2 HubIT” - The HUB for Boosting the Responsibility and Inclusiveness of ICT enabled Research and Innovation through Constructive Interactions with Social Sciences and Humanities (SSH) Research / 3 RRI - Responsible Research, Development and Innovation

## KEYNOTE AND INSPIRATIONAL SPEECH

### RADOSLAV MIZERA

VP & Chief Innovation Officer at Solved - The Cleantech Company. A cleantech enthusiast, in constant search of knowledge, walking through the rhythm of life.

His life has been about cleantech for the past 15 years, and even before that. Basically, he has dedicated his studies and work to this topic, as his biggest passion is to see the transformation of the human culture towards being nature sensitive and anticipative.

When studying in Vienna, he attended the coolest courses in the area of environmental / ecological economics, climate change or innovations / regional development & competitiveness, which can drive the cleantech transformation. Being alumni member of Oikos (global student organization on promoting sustainability for students of economics and management), YES (Youth Encounter on Sustainability – network operated by such institutions as ETH Zürich, MIT or Tokyo University), BMW Foundation (selected as a young leader), DSA (Deutsche Schülerakademie network under the auspices of the President of Germany), GES+ 2016 participant (Global Entrepreneurship Summit organized under the auspices of the President of the USA, Barack Obama), The Bridge of Future between China and CEE, or as partner of Team Finland in Slovakia, he is more than eager to explore the world of cleantech.

Now he is happy being an entrepreneur for the 5th year as Chief Innovation Officer at Solved – The Cleantech Company. Before that, he worked over 8 years as Finpro's Global Industry Analyst specializing in cleantech markets. Besides active consulting done for the Finnish cleantech SMEs, he was also an active member of the Cleantech Finland team from its very beginning in 2008 – bringing it to the world of social / digital media and co-creating the digital tool Solved.

From the industry point of view, he actively deals with questions & topics such as green ICT, sustainable energy and mobility systems, smart cities, etc. Besides his home – Slovakia – he has lived in the USA, China, Austria and his “second home” – Finland. He was also university lector, bachelor thesis supervisor and he liked it.



**SOLVED.**

## VERONIKA HLINIČANOVÁ

Veronika Hliničanová - Artist and researcher with 11 years' experience in academia (London, Oxford, Helsinki), completing her PhD about sacred space and the city. Recently she leads the 'Vivid Square' project, preparing an elaborate placemaking proposal for the most central public spaces in Bratislava. [Zivenamestie.sk](http://Zivenamestie.sk).

Igor Hianík and Nikola Winková - Authors of ITUD and continuators of the Slovak school of town-planning (Slovenská urbanistická škola)  
[www.inarchitekti.com](http://www.inarchitekti.com)

Interactive Tool for Urban Design (ITUD) is a new interactive tool that radically changes and simplifies urbanism. ITUD offers a new way of teaching architecture and urbanism, enriches science and research with an excellent device for city councils, municipalities and magistrates. It is especially vital for urban-planning and participative processes. Its uniqueness is in a unity of a physical model, virtual reality, hand-writing sketches, technical principles and expert analysis. It objectively reviews the quality of architectural and urbanistic proposals with its user-friendly interface that enables experts as well as amateurs to create public spaces in a new way. ITUD was inspired by similar projects conceived at MIT, Harvard, ETH Zurich, TU Munich and Weimar.



## MODERATED PANEL DISCUSSION

### ALEXANDRA BITUŠÍKOVÁ

Assoc. Prof. Dr. Alexandra Bitušíková, PhD. received her degrees in ethnology/ social anthropology from Comenius University in Bratislava. Currently she works as a university lecturer at Faculty of Arts and Vice-Rector for Research at Matej Bel University in Banská Bystrica. She was a visiting scholar at Cambridge University, UK; University College London, UK; and Boston University, U.S. (Fulbright). She participated as a partner in several Framework Programmes and H2020 research projects and is author of more than hundred publications on urban change, diversity, identity and gender. In 2001, she was seconded to the European Commission, DG Research in Brussels. From 2003 to 2008 she worked at the European University Association (EUA) in Brussels, and since 2009 she has been a Senior Adviser for EUA-Council for Doctoral Education. She is the Slovak national delegate in the H2020 SC6 Programme Committee and the national delegate in the ERAC Standing Working Group on Gender in Research and Innovation (former Helsinki Group).

### RADOSLAV MIZERA

Solved is a cleantech advisory service and collaboration platform. Solved tackles the worlds' environmental challenges in an amazing way, and lets you easily cooperate with the best cleantech experts. Solved brings together the leading experts, environmental challenges and new ways of working in order to cocreate appealing solutions. Solved was launched as a Cleantech Finlands' online service in 2012, and established as a separate company in May 2013. Solved has offices in Helsinki, Bratislava and Oulu.

Radoslav is a Chief Innovation Officer at Solved – The Cleantech Company.

## DAVID PAP

Presently David is the Chief Executive Officer and founder of FabLab Budapest, an open innovation laboratory. He believes in bottom-up innovation and helps others to create their first prototype. His goal is the democratization of digital manufacturing technologies. FabLab Budapest celebrates its 7th birthday this year. This workshop is the only Hungarian member of the international FabLab network.

FabLab Budapest is an open innovation laboratory. It is located in the downtown of Budapest, Hungary. Being member of FabLab network, its aim is to democratize access to personal and collaborative invention and innovation using digital technologies to make „almost anything”. We reach the scientific and engineering community by offering prototyping and manufacturing services. It also has a comprehensive education programme for rapid prototyping in general. Being a Rhino FabLab, parametric and generative modeling for artist and craftsman, including the use of digital manufacturing, are taught.



## JURY

### SLAVOMÍR HRUŠKA



Investeers is a fund management company, with the Fund of innovations and technologies as its primary client. Yearly they have a stable deal flow of over 100+ deals. As a fund manager they are managing over 14mil euro in VC funding, with so far 11 investments into scalable technology solutions. The median size of investment is between 300 and 500K euros with a maximum commit in the first round up to 1 mil as a single commitment. Regionally the investment focus so far has been Slovakia but they are actively looking for opportunities across CEE.

Slavomír comes from a corporate background, having worked for Fortune 500 companies, and later transitioning into the start-up world, where he builds a scalable localization solution with clients from over 20+ countries. His focus is on new technologies, evolving markets and business development, especially on thinking outside of the box and disruptive innovations.

### DAVID SZEDELY



Neulogy Ventures is the first Slovakia-based management company to run a fully regulated seed and venture capital funds. It was established in 2014 with the aim to finance and develop talented entrepreneurs and help their companies succeed in the global market. Neulogy Ventures builds on thorough knowledge of the tech scene, deep and wide network of mentors and advisors, and years of realizing equity investment transactions as both investors and entrepreneurs.

Over the past four years, Neulogy Ventures invested in over 30 early-stage companies, with particular focus on enterprise software, new media and cleantech solutions. Portfolio of Neulogy Ventures includes companies like GA Drilling (plasma drilling technology), Piano Media (global media paywall provider), Vectary (browser-based 3D content creation tool) and many others.

After getting a degree in Entrepreneurship and Finance from the University of Liechtenstein, David has worked as a financial analyst and deputy CFO at Neulogy, where he is responsible for financial planning, forecasting and reporting for Neulogy and its clients. Since 2014, he's been working at Neulogy Ventures, management company of a venture capital fund, where he's taking care for the finance, reporting, and consulting the portfolio companies. He enjoys the process of turning complex data into easy to digest information, and believes in the importance of data-driven decision making.



## RICHARD FEKETE



Step-by-step is Slovenská sporiteľňa & Erste Group's new approach to the development of Social Banking, which focuses on making an impact in our societies by:

- Improving financial stability and inclusion for people on low incomes
- Enabling job creation and self-employment by financing starting entrepreneurs
- Fostering development and enlarging the impact of social organizations

They believe that growth must be inclusive, so basic financial products and money advice must be available to everyone. Offering basic banking services to all people was one of the main reasons for the foundation of Erste österreichische Spar-Casse in 1819. This remains their purpose and responsibility as one of the leading banks in Central and Eastern Europe. Over the last 10 years, jointly with ERSTE Foundation, Erste has been implementing Social Banking projects in Austria, Slovakia, Czech Republic, Hungary, Romania, Serbia and Croatia.

Richard Fekete is a senior specialist with years of experiences with business and non-profit organizations. He had worked for several advertising and media agencies and run his own consulting company before joining Slovenská sporiteľňa in 2017.



# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## ANDREA CONCI

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Prototype: BugBits

### **One Line Pitch:**

A playful and interactive kit for educational and entertaining experiences

*What is the problem? /Who has the problem?*

Parents are always willing to offer to their children the best activities/games to improve their cognitive development. Educational toys and games are available at the market but the majority of these systems are not perceived as fun as other games/toys.

*Solution*

Bugbits identifies colors on which it is placed and reacts accordingly with lights and sounds, depending on the chosen color. The kit has already been used at the Mart museum of Rovereto to guide the visitors through an interactive „treasure hunt“, offering an active and fun exploration of the exhibits rooms and the discovery of the artworks. Considering that the system is modular and programmable, it could be adapted to different applications and contexts, such as teaching and exploration of music and colours.

*Advantages and benefits*

The use of a modular systems opens the possibility to the children to invent their games and modify the game behaviour by using a simple smartphone/tablet application. The flexibility of the systems helps children to remain engaged, having fun and learn. The flexible and easy to program approach fosters children thinking and helps them to develop problem solving skills.

### **Technology and unique features**

The use of a simple colour sensors in conjunction with the use of a smartphone application opens a large variety of applications and contexts of use:

- the free play
- educational activities performed autonomously by the children (with instructions guidance)
- workshops and laboratories at schools or in educational contexts
- quality time with parents

### **Envisioned product and added value for the (potential) clients**

Bugbits is proposed as a kit, used by children and parents to develop creativity, both on the technological side (e.g., programming/customization of the system) and the artistic one (e.g., exploration of music and colours); similarly, it can be used by schools and museums to develop and propose educational activities.

Bugbits is proposed as a kit, where users can customize/build their own physical artefact and program its behaviour through high-level programming. It can be placed in the market of technological educational kits, similar to products such as Makey Makey, LittleBits or Lego Mindstorm.

Bugbits is a mix between digital and analog, aimed at simplifying the interaction with technologies, especially in an educational perspective. Bugbits stimulates the empowerment of users: they are not passive subjects, instead they are encouraged to master the technologies and to control them according to their own desires.

### **Target customers**

Bugbits is designed for educational purposes in general; it can be used in a domestic environment (children and parents) as well as in schools and museums (teachers and educators).



# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## LUKÁŠ ČÁŠAR

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Prototype: LIFEBUTTON

### **One Line Pitch:**

System alerting to the driver's health problem

*What is the problem? /Who has the problem?*

Causes of death in car can be sudden also by health problem, not just consequence of an accident. Such as heart attack, hypoglycemi (diabetes), epileptic seizures, or other health problems.

*Solution*

The system uses already existing components of the vehicle, namely front and rear light and horn. The system starts simultaneous blinking of the front headlamps, rear brake lights and a horn, in the world-known S.O.S. (- - - . . . - - -)

*Advantages and benefits*

- Rescue of human lives by providing timely first aid
- Usability in aftermarket, followed by primary production
- Using existing components of the vehicle
- A unique combination of light and sound signals, known throughout the world
- Low production costs
- High social value of the idea
- Innovation upgrade for e-call

### **Technology and unique features**

We applied for patent protection. The result of research is that there is no such system anywhere in the world.

### **Envisioned product and added value for the (potential) clients**

In case of sudden driver's health problem, he can push the button and inform the surrounding about the seriousness of the situation and save his life.

### **Target customers**

Our main groups of customers are:

- People with health problems
- Seniors
- Responsible children of parents

**More information available at:** [www.lifebutton.eu](http://www.lifebutton.eu)

## VRATISLAV ČMIEL

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Prototype:

“Cell phone laboratory” - a spectral analyser for food and water quality and body liquids quantification

### **One Line Pitch:**

A laboratory in your phone

*What is the problem? /Who has the problem?*

A measurement of environmental parameters (such as water quality measurement), food quality, body liquids including transport and laboratory analysis is expensive and takes a lot of time.

*Solution*

Mobile apparatus including cell phone equipped with modules for UV, visible or infrared spectroscopy enables scientific (laboratory) analyses of liquids and solids in terrain, fast data sharing and their quantification.

*Advantages and benefits*

Fast quantification -> laboratory analysis can be made directly in terrain; Cheap analysis -> high-level analysis with no need of sample transport for analysis in a laboratory; Accessibility – laboratory analyses can be made by wide range of users.

### **Technology and unique features**

The spectrometric parts: miniaturized UV/VISIBLE spectral spectrometric, Michelson interferometry or Fabry–Pérot interferometry systems are miniaturized and included in a small module for cell-phones. Infrared spectroscopy enables compounds quantification with no need of indicators and additional equipment (such as sugar level in food or if the coffee is with or without caffeine).

### **Envisioned product and added value for the (potential) clients**

A small laboratory miniaturized into a module that can be attached to a cell phone and controlled by a cell app.

### **Target customers**

Wide public or people interested in diets -> food quality and food compounds quantification; people interested in health or sick people -> body liquids compounds quantification; environmentalists -> water quality or water toxicity measurement.

# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## KORINA DELIAGA

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Prototype: Robot Puppet Theatre (RPT)

### **One Line Pitch:**

Tool for learning STEM, Arts and Literature on single project

*What is the problem? /Who has the problem?*

Required reading is trouble for students as books are mostly out of touch with fast paced world. Educators either struggle to motivate kids or use pressure them to read - both methods have little effect.

*Solution*

RPT connect literature with visual arts (puppets, scenery), voice acting, and directing by programming (in block code). Students with different interests team up resulting in interdisciplinary project with very little resources needed.

*Advantages and benefits*

Theatre is the robot, puppets are just puppets. Simple and easy to use, shows reading with understanding, sharing interests as motivation for learning, combining technology and arts, suitable from very young children to the late teens.

### **Technology and unique features**

Based on Arduino and CNC mechanics, that are customized, RPT can be connected to any computer. We have developed our online block programming language. Puppets can be made of paper, cloth, even 3D printed.

### **Envisioned product and added value for the (potential) clients**

RPT is a device, can be used in classroom connecting several subjects. Play production is affordable (just cents per play), and plays can be produced without device so RPT can be shared among different classes.

### **Target customers**

Schools (both elementary and high schools), NGO's and Youth Centers, youth workers - as institutional customers eligible for funding through Erasmus+ projects. Other institutions as kindergartens and individual parents are secondary market.

**More information available at:** [www.lentintin.com](http://www.lentintin.com)

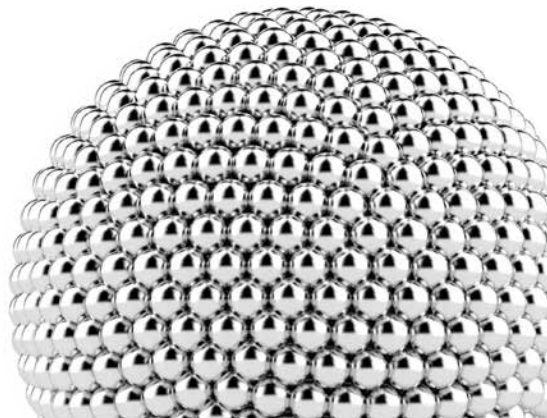
## DÁNIEL KISKÉRY,

Prototype: Lacunae Design

### **One Line Pitch:**

3D printed parametric jewellery

Lacunae Design is a new concept and brand of Dániel Kiskéry, a student of MOME Moholy-Nagy University of Art and Design, Design Institute. Dániel creates parametrically designed fashion items; jewelry and conceptual clothing with 3D printing and laser cutting, including innovative solutions such as LED lights. His most important project was HEXUBI, which was managed through MOME Digital Craft Lab's manufacturing research category. He is also known as an ambassador for Digital Craft Lab in cooperation with FabLab Budapest.



# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## FILIP KOLLÁR

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Prototype: IoT Weather Station

### **One Line Pitch:**

Smart weather stations for everyone

*What is the problem? /Who has the problem?*

To make a unique looking weather station with special design of heat dissipation for correct measurements.

*Solution*

Separated solar panel from the rest of the enclosure with special sun radiation shield.

*Advantages and benefits*

Much better measurements compared to other stations without sacrificing the design and shape of it. Also all data from it are available directly from your web browser or phone.

### **Technology and unique features**

My station is using custom designed and made PCB with many sensors for not only the temperature but also things like UV index, light intensity which you can use to protect yourself against sun burns. Also ventilation grid is made to protect the station against insect and rain but the air will not have any problem to get inside and circulate.

### **Envisioned product and added value for the (potential) clients**

My clients will get the important information about weather directly from their gardens and also indoor applications for example from the office or kitchen... They can see back all the data like for example hours when the sun was shining which can help to grow for example plants and also other applications.

### **Target customers**

Ordinary people, households with smart homes, gardeners, etc.

**More information available at:** <http://weatherstation.ml/>



## ROBERT LEŠKOVIĆ

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Prototype: Upcycled vacuum former

### **One Line Pitch:**

Simple machine, that forms molds and packings, put together from upcycled parts from household

*What is the problem? /Who has the problem?*

Expensive other similar competing products, unavailable to the general public, schools, school cooperatives for making simple tools. While in recycling yards there are plenty of quality unused needed parts.

*Solution*

People with different interests and base knowledge put together the machine vacuum former, they upcycle electrical parts and encourage sustainable development.

*Advantages and benefits*

The machine is simple to build and easy to use, through building it you learn basic electrical scheme. It makes fast personalized molds for soaps, souvenirs, pralines, gummy bears or protective packaging of other products. Suitable for people from 10 to up. The most important is the use of old parts that pollute the environment and are not recycled.

### **Technology and unique features**

Simple electric circuit consisting of electric heating elements, vacuum cleaner motor and tubes. You will learn about electrical devices and how to work safely with electrical parts. Everything is possible to assemble manually.

### **Envisioned product and added value for the (potential) clients**

When the machine connects to the production line of the concept designed in the 3D CAD program and then 3D printing the model, the users gain a production line for the personified customer requirements. And using upcycled parts of green-minded communities will support the compilation of these machines.

### **Target customers**

Schools and school cooperatives (both elementary and high schools), faculties, NGO's and Youth Centers, makers, household farming and little entrepreneurship.

# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## EMANUELE DI FRANCESCO

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Prototype: Orthoionics

### **One Line Pitch:**

The first vertical and smart solution that transforms every building in a farm

*What is the problem? /Who has the problem?*

In 2050, we will be 9.7 billion on this planet and 70% of us will live in cities. On the other side, 2/3 of arable land is expected to be lost. We need to create food-producing and green cities, implementing agriculture on buildings.

*Solution*

We developed a modular and reticular system to grow vegetables on vertical surfaces. The cultivation is completely automated, from sowing to harvesting. Wireless sensors allow to monitor the growth of the plants and a robotic arm harvests and replace the plant, removing the need of human maintenance for taking care of the plants.

*Advantages and benefits*

Our competitive advantages are:

- 1) Automated cultivation: integrated wireless sensors and a robotic arm remove the need of human maintenance
- 2) Modularity: our system can cover any vertical surface of any size
- 3) Vertical design: our system doesn't subtract urban space, it uses existing urban space

### **Technology and unique features**

- 1) Hydroponic cultivation: we cultivate plants reducing by 90% the water usage
- 2) Modular & vertical design: it's easy to replicate and to scale
- 3) Full automation: IoT sensors and robotics automate the entire growing process

### **Envisioned product and added value for the (potential) clients**

Our system gives credits to earn a Green Building certification (LEED, BREAM etc.). These certifications increase the value of a property and thus the ROI for a real estate investment. Creating edible plants walls allow the real estate owners to charge also premium fees for the consumption of the food by the tenants of the building.

### **Target customers**

Our customers are real estate owners who want to implement green walls with edible or ornamental plants on their buildings. Our product is suitable either for existing or new real estate projects.

**More information available at:** [www.orthoionics.com](http://www.orthoionics.com)

## MICHAL MRKÝVKA

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Prototype: The floating island

### **One Line Pitch:**

The technology of artificial floating islands to improve reservoir water quality

*What is the problem? /Who has the problem?*

Do you need to clean up a little dirty wastewater? Do you require an additional level of cleaning at the root-zone wastewater treatment plants? Do you have a problem with a high degree of eutrophication in your water tank?

*Solution*

The solution is an artificial floating island that is planted with plants. The plant roots are coated with biofilm, which helps in conjunction with microorganisms the removal of nutrients from water.

*Advantages and benefits*

The advantages of artificial floating island are their ecological, landscaping and aesthetic roles. Compared to competition, its price is a huge advantage. The advantage of our facility lies in the possibility of using it as a product - a product that can be produced and prepared in another location and subsequently sold as an expanded floating island.

### **Technology and unique features**

Uniqueness lies in a natural solution without the addition of chemical products to improve the quality of the water in the tank. The presence of plants will increase the biodiversity and aesthetic character of water tanks. One of the advantages is the absence of competition - there are floating island technologies, however they are complicated for production and expensive. Our solution with its manufacturing simplicity ensures economic availability.

### **Envisioned product and added value for the (potential) clients**

The product is a single segment of a floating carrier that covers the surface and allows for expansion wetland vegetation. It is used for standing water, water reservoirs, decorative biotopes, bathing or fish ponds, fire tanks, of all tanks where it is necessary to maintain naturally pure water. After applying a floating island to the water surface, the water quality can be expected to improve, with the product's life almost unlimited (the presence of perennial plants).

### **Target customers**

Owners of small water tanks or ponds, village with a root zone wastewater treatment plants and anyone who has a nutrient removal problem in standing natural water.

**More information available at:** e-mail [mrkyvka.m@fce.vutbr.cz](mailto:mrkyvka.m@fce.vutbr.cz) or [kriska.m@fce.vutbr.cz](mailto:kriska.m@fce.vutbr.cz)

# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## SEBASTIAN MÜLLER

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Prototype: rapitag

### **One Line Pitch:**

No more queues: rapitag is providing a mobile Self-Checkout for retail through IoT Anti-Theft Security

*What is the problem? /Who has the problem?*

Checkout queues are the painpoint #1 for customers. Self-Checkout could be a solution, but many products are too high valued and have a high risk of theft (e.g. Fashion, Consumer Electronics).

*Solution*

rapitag is an IoT Anti-Theft device, which can be removed by the customer directly. The customer can pay the product with his smartphone, the (reusable) tag opens automatically and can be removed by the customer.

*Advantages and benefits*

The customer has a high level of convenience, the app provides different (&more) payment options, product information, pictures, reviews, etc. With the individual customer-data we can target and advertise them directly for more sales.

### **Technology and unique features**

The patented rapitag IoT uses Bluetooth Low Energy (BLE) and standard Anti-Theft technologies. Our App SDK can be integrated in existing retailer apps, standalone or whitelabeled for iOS and Android and works with every smartphone.

### **Envisioned product and added value for the (potential) clients**

The rapitag checkout works everywhere and anytime, no need for a terminal, queue or even staff in the process. The retailer can reduce cost (HR) and increase sales (cross/upsales), the customer saves times and gets a better shopping experience.

### **Target customers**

Retail Industry, Logistics and Travel

### **More information available at:**

[www.rapitag.com](http://www.rapitag.com)

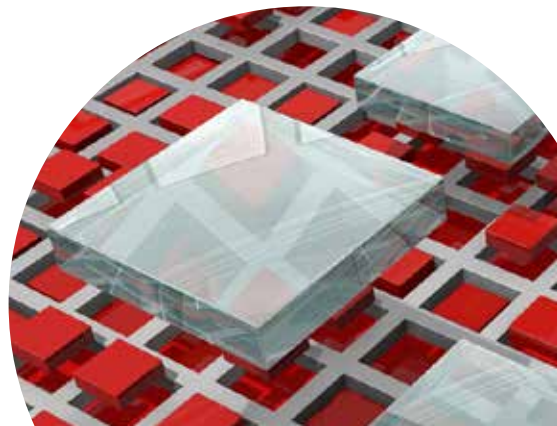
## GERGELY CSENDE

Prototype: PLATIO

### One Line Pitch:

Solar Paving

“PLATIO” is an unconventional, primarily outdoor energy producing, modular paving system optionally equipped with information technological functions. Platio provides an aesthetic and space-saving off-grid renewable energy system by integrating high-performance solar cells into attractive sidewalk paving elements made of recycled plastic. Electricity generated during sunshine hours can be stored by energy saving units or be used to operate functions integrated into the pavement or nearby electric devices of public places (public lighting, traffic control systems, other energy consuming street contrivances) independently from the grid.



# PRESENTATION OF TECHNOLOGIES BY ENTREPRENEURS

## DOMINIKA TÓTHOVÁ

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Prototype: COMPENT

### **One Line Pitch:**

Safety system for public events

*What is the problem? /Who has the problem?*

In recent years we have been able to watch series of disastrous terrorist attacks in public events. People attending these events didn't have a tool which could inform them about the threat immediately and provide a quick way out for them.

*Solution*

COMPENT is a safety system designed for public events. In the form of a bracelet, it serves as an access ticket for the event and, in all its forms, it serves as a navigation system for the user.

*Advantages and benefits*

As a result of this solution we can:

- prevent injuries caused by panic
- evacuate certain area much faster
- approach each user as an individual and personalize his/her way to the safety

### **Technology and unique features**

By mapping all exits, the system calculates location of the closest possible exit for certain user. In case of emergency, signal is sent to each visitor.

### **Envisioned product and added value for the (potential) clients**

People are able to clear out space much faster in case of emergency. Client would be able to navigate every single person and prevent injuries caused by panic.

### **Target customers**

This product is suitable for event agencies. They could be able to use it as a powerful tool, which will empower trust in their customers and improve their experience.

## MICHAEL ZOELZER

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Prototype: Evocase

### **One Line Pitch:**

Custom build-to-order premium luggage

*What is the problem? /Who has the problem?*

Frequent business travellers are facing a lot of friction on their way, like time-consuming opening of the case for security control, need of several bags for laptop and luggage and possibly handbag, very low payload due to weight restrictions for carry-on baggage and not washable, removable and exchangeable inner compartments.

*Solution*

A suitcase that is easy to open while standing, access to laptop and liquids while standing or lying down in the overhead bin, reduced weight and thus up to 20% more payload and removable and washable inner compartments.

*Advantages and benefits*

Individually customizable suitcase based on the build-to-order principles.  
Functional access to laptop and liquids.

### **Technology and unique features**

Lean production and build-to-order processes, mechanism to open the suitcase while standing, configurator (patent pending) and material use (patent pending).

### **Envisioned product and added value for the (potential) clients**

Transforming innovations from the automotive industry into the luggage industry, like lightweight materials, configurator and build-to-order, to ensure frictionless traveling.

### **Target customers**

Frequent travellers like employees from consulting and accounting firms as well as law firms.

**More information available at:** [www.evocase.de](http://www.evocase.de)

## WORKSHOP “Ecologically responsible innovations”

### VERONIKA DUGOVIČOVÁ

Veronika Dugovičová graduated from Faculty of Natural Sciences at Comenius University in Bratislava. During her studies she gained hands-on experience at Institute of Virology, Slovak Academy of Sciences. Currently, she works as a National Contact Point for the biggest European Research and Innovation programme - Horizon 2020 - at Slovak Centre of Scientific and Technical Information. She provides guidance for applicants conducting research in the field of Environment and Energy.

### NIKO NATEK

Experienced energy consultant with extensive knowledge of energy generation systems, energy management and renovation of buildings as well as management of European, cross-border and national projects. Initial experience gained in engineering companies, which specialized in energy installations as well as cooling and heating systems. Primarily a technician in charge of installing mechanical equipment and later promoted to work on testing of equipment under pressure in industrial cooling systems. After college employed in a mid-sized engineering company where originally responsible for installation and operational testing of electrical equipment in large-scale power systems (hydropower plants, thermo-power plants, energy grid junctures, etc.).

Obtained initial experience with project-based work, research and evaluation procedures while researching the efficiency of different mixtures (proportion of methane) of biogas and its practical effects in CHP systems. Started employment at the KSENA Energy Agency in 2013 as an energy consultant, where responsible for the execution of ongoing project activities, preparing project and investment documentation, administration of energy audits, calculation of buildings energy performance and preparation of project applications.

### ANDREA PITZSCHKE

Dr. Dipl.-Biochem. Andrea Pitzschke Austria's coordinator in the Ecolnn project, works as senior researcher at the Economica Institute of Economic Research, Vienna. She is a curiosity-driven scientist with over 20 years lab experience in biosciences, collected during research stays at German, British and Austrian Universities. Her inner urge to turn waste into value, seek „green“ alternatives for petrol-based materials & products finds its logical continuation in prototype development. She sees science communication as a key to raise public awareness for environmental concerns.



### ROMAN BEHÚL

Mr. Roman Behúl is a manager of international R&D projects in Atos Slovakia. He graduated from the University of Economics in Bratislava, later completed his postgraduate studies in banking in Luxembourg and Frankfurt. Roman was involved in various eGovernment as well as eJustice projects in Slovakia. He was the coordinator of the consortium in the Horizon2020 project „C2NET“ (Process Optimisation of Manufacturing Assets) and currently acts as a project manager in H2020 project „MONICA“ and e-learning project „NEWTON“. The SoundCity Project MONICA aims to be a very large scale demonstration of how cities can use Internet of Things technologies to provide sound and security solutions for large, open-air events in the smart city. The solution is deployed and tested in 6 major cities in Europe. MONICA demonstrates a large scale IoT ecosystem that uses innovative wearable and portable IoT sensors and actuators with closed-loop back-end services integrated into an interoperable, cloud-based platform capable of offering a multitude of simultaneous, targeted applications. All ecosystems will be demonstrated in the scope of large scale city events, but have general applicability for dynamically deploying Smart City applications in many fixed locations such as airports, main traffic arterials, and construction sites.

### IGOR HIANÍK & NIKOLA WINKOVÁ

Igor Hianík and Nikola Winková - Authors of ITUD and continuators of Slovak school of town-planning (Slovenská urbanistická škola)  
[www.inarchitekti.com](http://www.inarchitekti.com)

Interactive Tool for Urban Design (ITUD) is a new interactive tool that radically changes and simplifies urbanism. ITUD offers a new way of teaching architecture and urbanism, enriches science and research with an excellent device for city councils, municipalities and magistrates. It is especially vital for urban-planning and participative processes. Its uniqueness is in a unity of a physical model, virtual reality, hand-writing sketches, technical principles and expert analysis. It objectively reviews the quality of architectural and urbanistic proposals with its user-friendly interface that enables experts as well as amateurs to create public spaces in a new way. ITUD was inspired by similar projects conceived at MIT, Harvard, ETH Zurich, TU Munich and Weimar.

## WORKSHOP “ECOLOGICALLY RESPONSIBLE INNOVATIONS”

*Interactive workshop, Inspiration, Knowledge exchange debate for general public and experts*

### WORKSHOP AIMS TO:

support the learning process in the Danube region; contribute to knowledge exchange of stakeholders as well as the general public; and support development of **communities in the Danube region that will have positive impact on environment and energy saving**. The workshop presents **at the same time an inspiration how to eco-innovate by an inventor and researcher, an experience sharing by an implementer, and a debate on funding grants of environmentally responsible ideas, research and entrepreneurship**. The workshop is an integral part of the Ecoinn Danube project, implemented under Danube Transnational Programme, which brings together the ecoinnovative community in the Danube region under the ecoinnovative.eu platform.

### WHAT YOU WILL LEARN? PARTICIPANTS WILL:

- ✿ Learn what eco-innovation is; and why to be eco-innovative in your business, research or innovation ideas
- ✿ Learn what to consider when you implement an eco-innovative solution
- ✿ Learn how to find coworkers for your ideas and how to apply for grants in the international environment

### SPEAKERS AND WORKSHOP LEADERS:

- ✿ Think “eco”, when you innovate! Andrea Pitzschke - inventor and researcher - Economica Austria
- ✿ EcoInnovation in Danube region/Energy Efficiency/Implementation of ecologically friendly ideas /TBC – Niko Natek – Energy consultant , KSENA Slovenia
- ✿ How to fund your eco-innovative ideas and business – Horizon 2020 options – Veronika Dugovičová – National Contact Point Horizon 2020 – Climate action and Energy – SCSTI Slovakia
- ✿ Wrap up and Feedback

## WORKSHOP HUBIT “TECHNOLOGY WITH AND FOR SOCIETY”

*“Successful co-creation of knowledge in digital technologies, ensuring that ICT research, development and innovation corresponds to societal needs and is responsible.”*

The aim of the workshop is to boost collaboration between ICT and SSH<sup>1</sup> communities. Additionally the event provides an opportunity to get acquainted with the HubIT<sup>2</sup> project, its outputs and tools, the ways to apply them and their added value for ICT related research, development and innovation. The event also strives to gather feedback on the tools presented, in order to tailor them better to the needs of future users.

The National workshop of the Horizon2020 project “HubIT” aims at bringing together and creating synergies between the ICT community, SSH researchers, public sector, policy makers and other stakeholders. It will also feature ways of becoming an „RRI<sup>3</sup>-proved“ ICT project/initiative/business and describing the main drivers and added value for the actors to follow an RRI approach.

### WHAT TO EXPECT?

- Presentation of the HubIT project.
- Introduction and demonstration of the European Framework Model of responsible ICT innovation and the assistance its resources offer.
- World café to generate practical ideas on how to enable SSH and RRI collaboration in ICT research and innovation.
- Living library – sharing inspirational stories on synergies between societal needs and technology-oriented innovation.
- Moderated discussion on how to become an „RRI-proved“ ICT project/initiative/business including the main drivers and added value for the actors to follow an RRI approach.
- Idea generation/brainstorming on how to implement the concepts of RRI and SSH in ICT with respect to the six defined criteria<sup>4</sup> and two cross-cutting issues.<sup>5</sup>

1 SSH - Social Sciences and Humanities

2 HubIT” - The HUB for boosting the Responsibility and inclusiveness of ICT enabled Research and Innovation through constructive interactions with Social Sciences and Humanities (SSH) research

3 RRI - Responsible Research and Innovation

4 Six criteria: Ethics, Public Engagement, Gender Equality, Science Education, Open Access, Governance

5 Two cross-cutting issues: Social Justice and Sustainability



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