HORIZON Europe

Twinning Western Balkans Special – II day

TOPIC ID: HORIZON-WIDERA-2021-ACCESS-02-01

Prof. Goran Stojanović

2. IMPACT

2. Impact

Impact – aspects to be taken into account.

- Credibility of the pathways to achieve the expected outcomes and impacts specified in the work programme, and the likely scale and significance of the contributions due to the project.
- Suitability and quality of the measures to maximize expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.

The results of your project should make a contribution to the expected outcomes set out for the work programme topic over the medium term, and to the wider expected impacts set out in the 'destination' over the longer term.

In this section you should show how your project could contribute to the outcomes and impacts described in the work programme, the likely scale and significance of this contribution, and the measures to maximise these impacts.

2.1 Project's pathways towards impact *[e.g. 4 pages]*

- Provide a **narrative** explaining how the project's results are expected to make a difference in terms of impact, beyond the immediate scope and duration of the project. The narrative should include the components below, tailored to your project.

(a) Describe the unique contribution your project results would make towards (1) the **outcomes** specified in this topic, and (2) the **wider impacts**, in the longer term, specified in the respective destinations in the work programme.

⚠ *Be specific, referring to the effects of your project, and not R&I in general in this field.*

⚠ *State the target groups that would benefit. Even if target groups are mentioned in general terms in the work programme, you should be specific here, breaking target groups into particular interest groups or segments of society relevant to this project.*

⚠ *The outcomes and impacts of your project may be:*

- *Scientific, e.g. contributing to specific scientific advances, across and within disciplines, creating new knowledge, reinforcing scientific equipment and instruments, computing systems (i.e. research infrastructures);*
- *Economic/technological, e.g. bringing new products, services, business processes to the market, increasing efficiency, decreasing costs, increasing profits, contributing to standards' setting, etc.*
- *Societal , e.g. decreasing CO_2 emissions, decreasing avoidable mortality, improving policies and decision making, raising consumer awareness.*

Only include such outcomes and impacts where your project would make a significant and direct contribution. Avoid describing very tenuous links to wider impacts. However, include any potential negative environmental outcome or impact of the project. Where relevant, explain how the potential harm can be managed.

(b) Describe any requirements and potential barriers - arising from factors beyond the scope and duration of the project - that may determine whether the desired outcomes and impacts are achieved. These may include, for example, other R&I work within and beyond Horizon Europe; regulatory environment; targeted markets; user behaviour. Indicate if these factors might evolve over time. Describe any mitigating measures you propose, within or beyond your project, that could be needed should your assumptions prove to be wrong, or to address identified barriers.

⚠ *Note that this does not include the critical risks inherent to the management of the project itself , which should be described below under 'Implementation'.*

(c) Give an indication of the scale and significance of the project's contribution to the expected outcomes and impacts, should the project be successful. Provide quantified estimates where possible and meaningful.

⚠ *'Scale' refers to how widespread the outcomes and impacts are likely to be. For example, in terms of the size of the target group, or the proportion of that group, that should benefit over time; 'Significance' refers to the importance, or value, of those benefits. For example, number of additional healthy life years; efficiency savings in energy supply.*

⚠ *Explain your baselines, benchmarks and assumptions used for those estimates. Wherever possible, quantify your estimation of the effects that you expect from your project. Explain assumptions that you make, referring for example to any relevant studies or statistics. Where appropriate, try to use only one methodology for calculating your estimates: not different methodologies for each partner,*

Outcome, Impact and Pathways

Expected outcome

- Medium term
- Occur during or shortly after the end of the project

Outcomes

Expected impacts

- Longer term
- Occur some time after the end of the project

Impacts

Pathways

Logical steps toward outcomes and impacts. A plan for achieving the outcome/impacts. Beyond the immediate scope and duration of the project.

Expected outcomes

Project results are expected to contribute to all of the following expected outcomes:

- Improved excellence capacity and resources in Western Balkan countries enabling to close the still apparent research and innovation gap within Europe.
- Enhanced strategic networking activities between the research institutions of the Western Balkan countries and at least two internationally-leading counterparts at EU level.
- Raised reputation, research profile and attractiveness of the coordinating institution from the Western Balkan country and the research profile of its staff.
- Strengthened research management capacities and administrative skills of the staff working in institutions from the Western Balkan country.
- Improved creativity supported by development of new approaches in R&I collaboration, increased mobility (inwards and outwards) of qualified scientists

Expected impacts

Proposals for topics under **this Destination** should set out a credible pathway to contributing to the following expected impacts:

- ***Increased science and innovation capacities*** for all actors in the R&I system in widening countries
- ***Structural changes*** leading to a modernised and more competitive R&I systems in eligible countries
- ***Reformed R&I systems*** and institutions leading also to increased attractiveness and retention of research talents
- Mobilisation of national and European resources for strategic investments
- ***Higher participation success in Horizon Europe*** and more consortium leadership roles
- Stronger linkages between academia and business and improved career permeability
- Strengthened role of the Higher Education sector in research and innovation
- Greater involvement of regional actors in R&I process
- Improved outreach to international scale for all actors

Impact criteria

Aspect 1

Credibility of the **pathways** to achieve the **expected outcomes** and **impacts** specified in the programme, and the likely **scale** and **significate** of the contributions due to the project.

- Pathways
- Expected outcomes
- Expected impacts
- Scale
- Significance

Aspect 2

Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the **dissemination** and **exploitation** plan, including **communication** activities.

- Dissemination
- Exploitation
- Communication

Outcome and Impact

Expected outcome

- Focused EC goal
- Specified in the topic

Expected impacts

- Wider EC goals
- Specified in the destinations

Target groups

Who would benefit

Describing the impact of your proposal

Project's pathway towards impact

…by thinking about the specific contribution the project make to the expected outcomes and impacts set out in Work programme.

Only include such outcomes and impacts where your project would make a significant and direct contribution. Avoid describing very tenous links to wider impacts. Refer to the effects of your project, and not R&I general in this field. State the target groups that would benefit from your project.

The outcomes and impacts of your project may be:

- **Scientific:** contributing to specific scientific advances, across and within disciplines, creating new knowledge, reinforcing scientific equipment and instruments, computing system;

- **Economic/technological:** fostering all forms of innovation, faciliting technological development, knowledge transfer, and e.g. bringing new products, services, business processes to the market, increasing efficiency, decreasing costs, increasing profits, contributing to standards' setting, etc.

- **Societal:** Generating knowledge, strengthening the impact of R&I in developing, supporting and implementing policies, and supporting the uptake of innovative solutions in industry and society to address global challenges.

Describing the impact of your proposal

Describe any requirements and potential barriers that may determinate whether the desired outcomes and impacts are achieved and mitigation measures proposed.

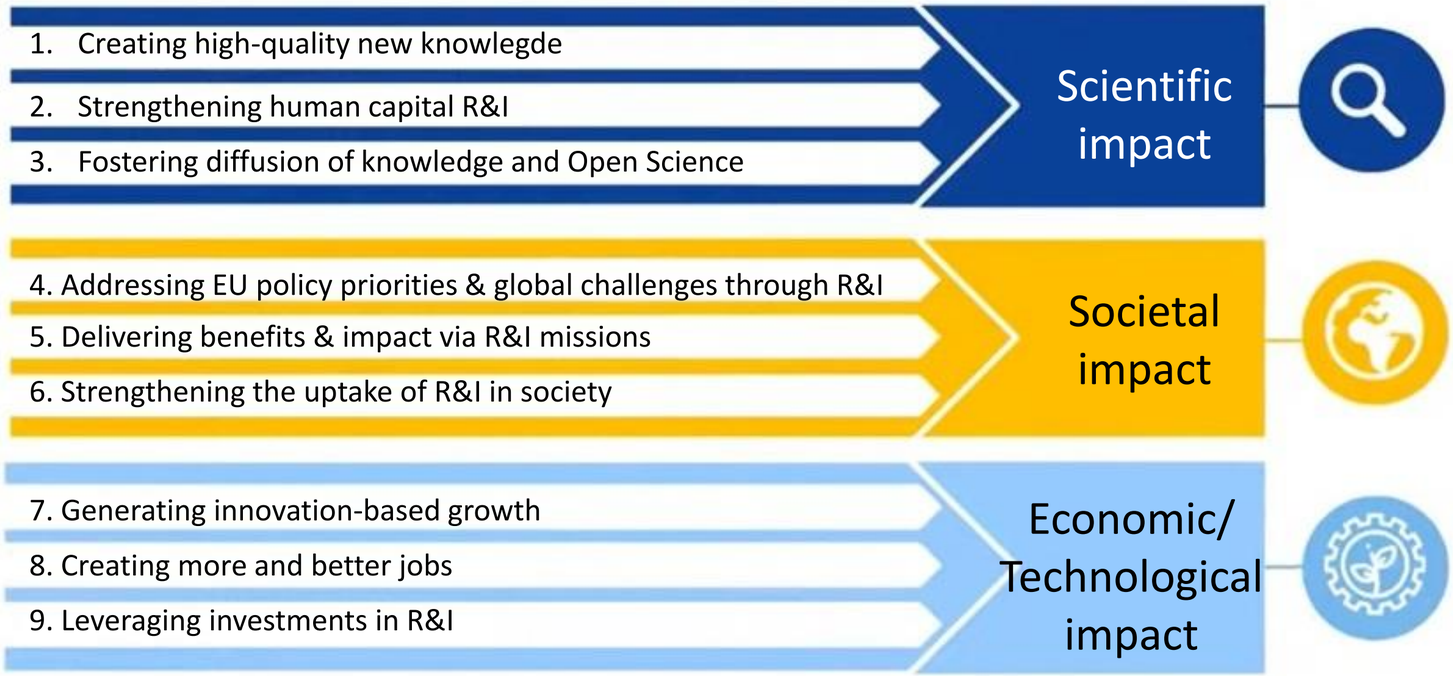
- Requirements and potential barriers might be: other R&I works within and beyond Horizon Europe, environment, targeted markets, user behavior…

- Describe and potential negative environmental outcome or impact and explain how the potential harm can be managed

Give an (quantified) scale and significance of the project's contribution

- **Scale:** how widespread the outcomes and impacts are likely to be. Ex: size of the target group, proportion of that group
- **Significance:** refers to the importance or value of he benefits. Ex: number of additional healthy life years, efficiency savings in energy supply

HORIZON EUROPE LEGISLATION DEFINES THREE TYPES OF IMPACT, TRACKED WITH KEY IMPACT PATHWAYS



IMPACT (example)

	Results	Outcome	Impact
HORIZON EUROPE PROJECTS [project results]	**Successful large-scale demonstration trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management**	**At least 9 European airports adopt the advanced forecating system that was demonstrated during the project**	**15% increase of maximum passenger capacity in European airports**

Project

EXPECTED IMPACTS

➡ DESTINATIONS

= General objectives

Wider effects on society (inc. the environment), the economy and the science enabled by the outcomes of R&I investiments (long term)

Exapmle

Strategic Plan & Work Programme: R&I Contribution to seamless, smart inclusive and sustainable mobility services

Project: Increase maximum passenger capacity by 15% and passenger average throughput by 10%, leading to 28% reduction in infrastructure expansion costs

EXPECTED OUTCOMES

➡ TOPICS

= Specific objectives

Effects of Horizon Europe projects such as uptake, diffusion, use and deployment of the projects' results by direct target groups (medium term)

Exapmle

Work Programme: Innovative accessibility and logistics solutions applied by the European Transport sector

Project : At least 9 European airports adopt the advanced forecasting system that was demonstrated during the project

PROJECT RESULTS

= Operational objectives

What is produced during the project implementation, such as innovative solutions, algorithms, new business models, guidelines, policy, recommendations, methodologies, publications, database, prototypes, trained researchers, new infrastructure, proof of feasibility, etc. (short term)

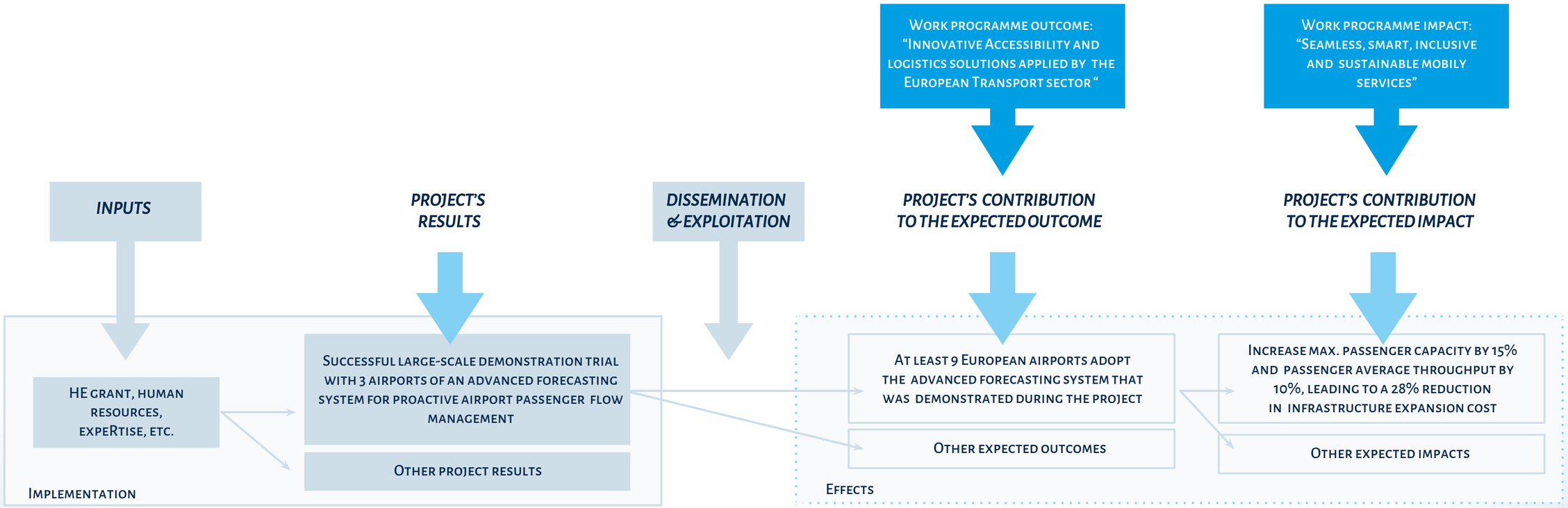
Exapmle

Project (by the end of its implementation): Successful large-scale demonstration trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management

Impact of the project

Project's pathway towards impact

... by thinking about the specific contribution the project can make to the expect outcomes and impacts set out in the Work Programme.



Scale and Significance

Scale

- How widespread to outcome and impacts are likely to be

- Example: how many people are benefiting (i.e. the size of the target group)

Significance

- How large the benefits for the target groups are likely to be

- Example: tones of CO_2 saved per household

Twinning Western Balkans special

Quantitative, for example

FOR MEASURING OUTCOMES *FOR MEASURING IMPACTS*

Key performance indicators	Baseline (year 2021)	Project completion (year 2024)	Two years after (year 2026)
International monographs	2	3	4
Number of scientific publications in the top 10% most cited scientific journals worldwide	6	7	8

Barriers for impact achievement

- Potential barriers from factors beyond the scope and duration of the project
- Limit achievement of the project expected outcomes and impacts

- PESTEL analysis
  - **P**olitical
  - **E**conomic
  - **S**ocial
  - **T**echnological
  - **E**nvironmental
  - **L**egal

- Describe the mitigating measures you propose

Examples of requirements/barriers

"EU leaders do not want to share Know-how (secrets in the field"

Management of the institution does not understand the significance of the project

"Threat from International competitors… if innovation speed is not accelerated"

Legacy – "Systems, infrastructure, institutions already in place"

Culturally conservative approach to innovations in the market or from the end users

2. IMPACT

2.2 Measures to maximise impact - Dissemination, exploitation and communication *[e.g. 5 pages, including section 2.3]*

- Describe the planned measures to maximise the impact of your project by providing a first version of your 'plan for the dissemination and exploitation including communication activities'. Describe the dissemination, exploitation and communication measures that are planned, and the target group(s) addressed (e.g. scientific community, end users, financial actors, public at large).

  ⚠ *Please remember that this plan is an admissibility condition, unless the work programme topic explicitly states otherwise. In case your proposal is selected for funding, a more detailed 'plan for dissemination and exploitation including communication activities' will need to be provided as a mandatory project deliverable within 6 months after signature date. This plan shall be periodically updated in alignment with the project's progress.*

  ⚠ *Communication[1], measures should promote the project throughout the full lifespan of the project. The aim is to inform and reach out to society and show the activities performed, and the use and the benefits the project will have for citizens. Activities must be strategically planned, with clear objectives, start at the outset and continue through the lifetime of the project. The description of the communication activities needs to state the main messages as well as the tools and channels that will be used to reach out to each of the chosen target groups.*

  ⚠ *All measures should be proportionate to the scale of the project, and should contain concrete actions to be implemented both during and after the end of the project, e.g. standardisation activities. Your plan should give due consideration to the possible follow-up of your project, once it is finished. In the justification, explain why each measure chosen is best suited to reach the target group addressed. Where relevant, and for innovation actions, in particular, describe the measures for a plausible path to commercialise the innovations.*

  ⚠ *If exploitation is expected primarily in non-associated third countries, justify by explaining how that exploitation is still in the Union's interest.*

  ⚠ *Describe possible feedback to policy measures generated by the project that will contribute to designing, monitoring, reviewing and rectifying (if necessary) existing policy and programmatic measures or shaping and supporting the implementation of new policy initiatives and decisions.*

- Outline your strategy for the management of intellectual property, foreseen protection measures, such as patents, design rights, copyrights, trade secrets, etc., and how these would be used to support exploitation.

  ⚠ *If your project is selected, you will need an appropriate consortium agreement to manage (amongst other things) the ownership and access to key knowledge (IPR, research data etc.). Where relevant,*

EXCERPT FROM PROPOSAL TEMPLATE

Impact of the project

Dissemination, exploitation and communication

To include a draft plan in proposal is an admissibility condition, unless the work programme topic explicitly states otherwise.

All measures should be **proportionate** to the scale of the project, and should contain **concrete actions** to be implemented both **during and after** the end of the project.

Elements of the D&E&C plan

» **Planned measures** to maximise the impact of projects
» **Target groups** (e.g. scientific community, end users financial actors, public at large) and proposed channels to interact
» **Communication measures** for promoting the project and its findings throughout the full lifespan of the project
» **Policy feedback** measures to contribute to policy shaping and supporting the implementation of new policy initiatives and decisions
» Follow up plan to foster **exploitation /uptake** of the results

Comprehensive and feasible strategy for the management of the intellectual property (the provision of a results ownership list is mandatory at the end of the project).

Dissemination vs. communication

COMMUNICATION	DISSEMINATION
About the **project** and **results**	About **results** only
Multiple Audiences Beyond the project's own community (include the media and the public)	**Audiences that may use results** in their own work e.g. peers (scientific or the project's own community), industry, and other commercial actors, proffesional organisations , policy makers
Inform and **reach out to society**, show the benefits of research	Enable use and uptake of results

INFORMING ABOUT PROJECT

» Newsletter
» Press release
» Project factsheet, broschures
» social media (blogs, twitter, facebook, linkedIn, ResearcherGate)

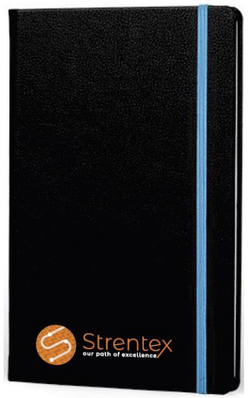
INFORMING ABOUT RESULTS

» Project website
» Videos
» Interviews
» Articles in magazines
» Exhibitions / open days
» Conference
» Presentation

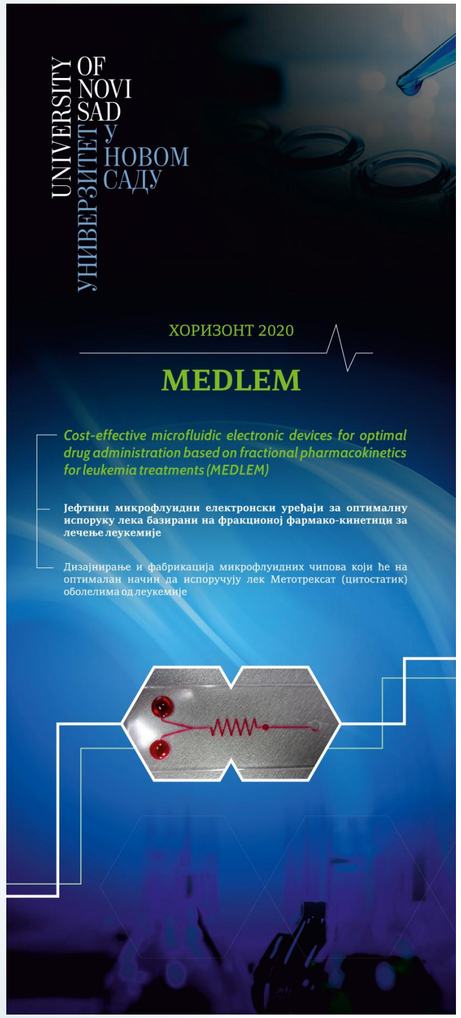
MAKING RESULTS AVAILABLE FOR USE

» Scientific publications
» Policy brief / roadmap
» Training / workshop / demos
» Sharing results on online repository (research data, software, reports)

PROMOTIONAL MATERIALS



Posters


UNIVERSITY OF NOVI SAD
УНИВЕРЗИТЕТ У НОВОМ САДУ
ХОРИЗОНТ 2020
MEDLEM
Cost-effective microfluidic electronic devices for optimal drug administration based on fractional pharmacokinetics for leukemia treatments (MEDLEM)
Јефтини микрофлуидни електронски уређаји за оптималну испоруку лека базирани на фракционој фармако-кинетици за лечење леукемије
Дизајнирање и фабрикација микрофлуидних чипова који ће на оптималан начин да испоручују лек Метотрексат (цитостатик) оболелима од леукемије


Medlem
Personalized Dosing Solutio
УНИВЕРЗИТЕТ У НОВОМ САДУ
ВРХУНСКИ РЕЗУЛТАТИ 2016
UNIVERSITY OF NOVI SAD
TOP ACHIEVEMENTS 2016
УНИВЕРЗИТЕТ У НОВОМ САДУ
HORIZON 2020 PROJECT:
Cost-effective microfluidic electronic devices for optimal drug administration based on fractional pharmacokinetics for leukemia treatments – MEDLEM, руководилац: проф. др Горан Свијошевић
Циљ пројекта
Опрема
Резултати
WWW.UNS.AC.RS


Medlem
Personalized Dosing Solution
Horizon 2020-MSCA-RISE project
Cost-effective microfluidic electronic devices for optimal drug administration based on fractional pharmacokinetics for leukemia treatments

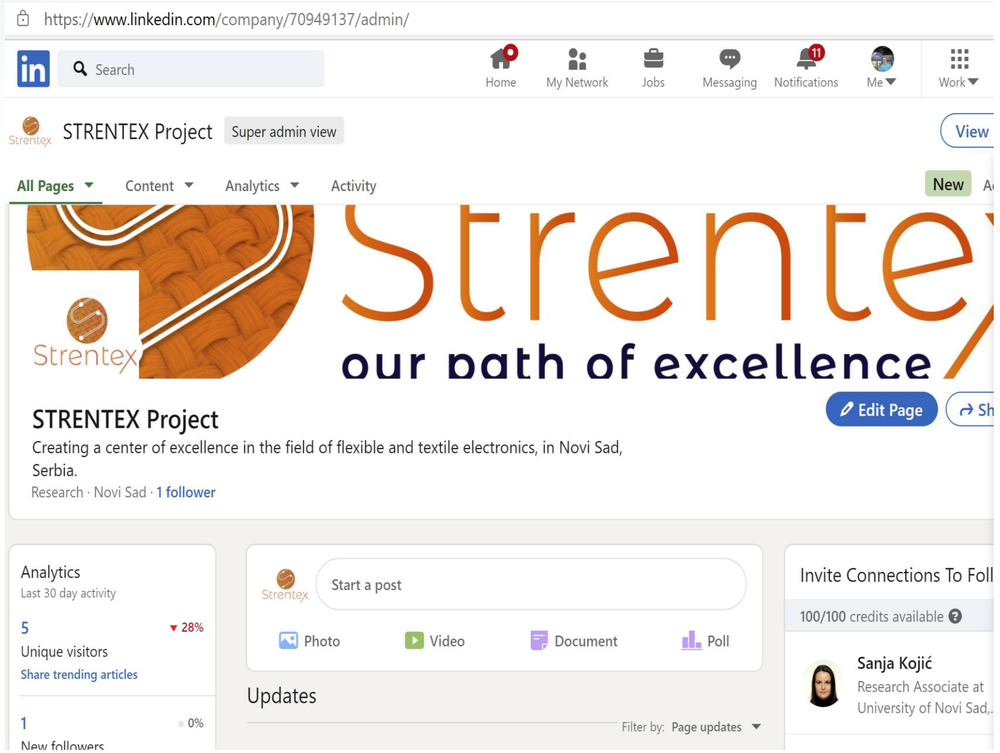
Festival of science

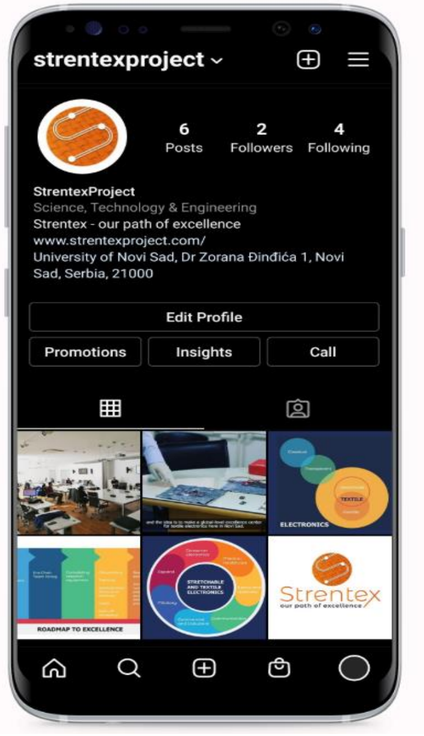
Researchers' nights

PUBLICATIONS

INTERNATIONAL CONFERENCES

Social media





OBLIGATIONS OF BENEFICIARIES TO EXPLOIT THEIR RESOURCE

• In Horizon Europe, as in H2020, the obligation to exploit remains and is a responsibility of the beneficiaries on a “best efforts” approach

• When specified in the WP additional exploitation obligations could be applied

• Horizon Europe encourages the use of the R&I results through third party exploitation (where appropriate)

• If despite the best effort for exploitation no uptake happens within a specific period after the end of the project (1 year), then the project must use the Horizon Results Platform to make exploitable results visible (unless obligation is waived)

• The Horizon Results Platform is free, is part of the F&T portal, available to all beneficiaries and is based on results, not on projects.

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-results-platform

IPR and exploitation of project results

Describe which of the project outcomes:

» You plan to patent
» Or to sell licence
» Or to protect as industrial design
» Or as a standard, etc.

Exploitation

The utilisation of results in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.

Spin-off/Start-up
Product
Patent
PhD thesis/post
Standard
Service
Societal activity
Open/copyleft licences
Further research
Policy change

In order to facilitate further use of results it is necessary: Innovation management, IPR, Copyright management, Data management plan, active stakeholder/user engagement.

Management of intellectual property

Each Horizon Europe beneficiary shall use its best efforts to exploit the **results it owns**, or to have them exploited by another legal entity, in particular through the transfer and licensing of results. In this respect beneficiaries are required to adequately **protect their results** – if possible and justified – taking account of possible prospects for commercial exploitation and any other legitimate interest.

IP management in a proposal:

• Does the proposal present a comprehensive and feasible strategy for the management of the intellectual property generated in the project, including protection measures (if relevant)?

• Is the IP strategy commensurate with the described impact pathways to outcomes and impacts and therefore underpins the 'credibility' of these pathways?

• Does it consider 'freedom to operate' regarding background owned by consortium members of third parties (if relevant)?

• Does the IP approach give due through to balancing between publications of results and plans to protect IP, e.g. in terms of timing the respective activities, involvement of IP experts?

•If relevant (work programme), have additional exploration obligations in relation to IP been considered?

The provision of **a results ownership list (ROL)** is **mandatory** at the end of the project.

2. Impact (Summary)

2.3 Summary

Provide a summary of this section by presenting in the canvas below the key elements of your project impact pathway and of the measures to maximize its impact.

KEY ELEMENT OF THE IMPACT SECTION

SPECIFIC NEEDS	EXPECTED RESULTS	D & E & C MEASURES
What are the specific needs that triggered this project? **Example 1** Most airports use flow-oriented models based on static mathematical values limiting the optimal management of passenger flow and hampering the accurate use of the available resources to the actual demand of passengers. **Example 2** Electronic components need to get smaller and lighter to match the expectations of the end-users. At the same time there is a problem of sourcing of raw materials that has an environmental impact.	**What do you expect to generate by the end of the project?** **Example 1** **Successful large-scale demonstrator:** Trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management. **Algorithmic model:** Novel algorithmic model for proactive airport passenger flow management. **Example 2** Publication of a **scientific discovery on transparent electronics.** **New product:** More sustainable electronic circuits. **Three PhD students trained.**	**What dissemination, exploitation and communication measures will you apply to the results?** **Example 1** **exploitation :** Patenting the algorithmic model. **Dissemination towards the scientific community and airports:** Scientific publication with the results of the large-scale demonstration. **Communication toward citizens:** An event in a shopping mall to show how the outcomes of the action are relevant to our everyday lives. **Example 2** **exploitation of the new product**: Patenting the new product; Licensing to major electronic companies. **Dissemination towards the scientific community and industry:** Participating at conferences; Developing a platform of material compositions for industry; Participation at EC project portfolios to disseminate the results as part of a group and maximize the visibility vis-à-vis companies.

Excerpt from proposal template

2. Impact (Summary)

TARGET GROUPS	OUTCOMES	IMPACTS
Who will use or further up-take the results of the project? Who will benefit from the results of the project? **Example 1** **9 European airports:** Schiphol, Brussels airport… **The European Union aviation safety agency**. **Air passengers** (indirect). **Example 2** **End-users**: consumers of electronic device. **Major electronic companies:** Samsung, Apple, etc. **Scientific community** (field of transparent electronics).	**What change do you expect to see after successful dissemination and exploitation of project results to the target group(s)?** **Example 1** **Up-take airports:** 9 European airports adopt the advanced forecasting system demonstrated during the project. **Example 2** **High use of the scientific discovery published** (measured with the relative rate of citation index of project publications). **A major electronic company** (Samsung or Apple) **exploits/uses the new product** in their manufacturing.	**What are the expected wider scientific, economic and societal effects of the project contributing to be expected impact outlined the respective destination in the work programme** **Example 1** **Scientific:** New breakthrough scientific discovery on passenger forecast modelling. **Economic:** Increased airport efficiency Size 15% increase of maximum passenger capacity in European airports, leading to a 28% reduction in infrastructure expansion costs. **Example 2** **Scientific:** New breakthrough scientific discovery on transparent electronics. **Economic/Technological:** A new market for touch enabled electronic devices. **Societal:** Lower climate impact of electronics manufacturing (including through material sourcing and waste management).

Excerpt from proposal template

BUDGET A PART

3 - Budget

No.	Name of beneficiary	Country	Role	Personnel costs/€	Subcontracting costs/€	Purchase costs - Travel and substistence/€	Purchase costs - Equipment/€	Purchase costs - Other goods, works and services/€	Internally invoiced goods and services/€ (Unit costs-usual accounting practices)	Indirect costs/€	Total eligible costs	Funding rate	Maximum EU contribution to eligible costs	Requested EU contribution to eligible costs/€	Max grant amount	Income generated by the action	Financial contributions	Own resources	Total estimated income
1	Ftn	RS	Coordinator							0.00	0.00	100	0.00		0.00				0.00
2			Partner							0.00	0.00	100	0.00		0.00				0.00
3			Partner							0.00	0.00	100	0.00		0.00				0.00
	TOTAL			0	0	0	0	0	0	0.00	0.00		0.00	0	0.00	0	0	0	0.00

Concept and methodology

Describe in more details **WHAT** will be done in work packages

Example 1 of work packages :

- WP1 – KNOWLEADGE EXCHANGE
- WP2 – STRATEGIC RESEARCH COLLABORATION
- WP3 – TRAINING AND NETWORKING
- WP4 – DISSEMINATION AND OUTREACH
- WP5 – MANAGEMENT

BUDGET FOR SOME ACTIVITIES - EXAMPLE

WP1 – KNOWLEADGE EXCHANGE

Sending	Hosting	No of visits	Duration months	Total months	Total days	Daily allowance	Personnel costs	Traveling (ticke	Hotel per night	Accomodation	Travel and substistence
UNS	XXX	3	2	6	180	100	18000	500	100	18000	19500
UNS	YYY	3	2	6	180	100	18000	500	100	18000	19500
XXX	UNS	3	1	3	90	100	9000	500	100	9000	10500
YYY	UNS	3	1	3	90	100	9000	500	100	9000	10500

Partner	Task/Activity	Person-Month	Montly salary	Personnel costs
XXX	Creation of educative videos	2	5000	10000
YYY	Creation of Tutorials and e-books	3	7600	22800

Budget per WP - example

WP4 budget		Personnel	Travel and substistence	Other direct	Total
	UNS	33720	15000	38800	87520
	XXX	10000	3600	12000	25600
	YYY	15200	3600	11700	30500
	Total WP4	58920	22200	62500	**143620**

WP4 PM		T4.1	T4.2	T4.3	Total PM
	UNS	3	6	5	**14**
	XXX	0	2	2	**4**
	YYY	0	2	2	**4**
	Total WP4	**3**	**10**	**9**	**22**

Table 3.1f: Summary of staff effort

Please indicate the number of person-months over the whole duration of the planned work, for each work package, for each participant. Identify the work-package leader for each WP by showing the relevant person-month figure in bold.

	WPn	WPn+1	WPn+2	Total Person-Months per Participant
Participant Number/Short Name				
ParticipantNumber/ Short Name				
Participant Number/Short Name				
Total Person Months				

Excerpt from proposal template

TOTAL PROJECT BUDGET PER PARTNERS - EXAMPLE

No.	Name of beneficiary	Country	Role	Personnel costs/€	Subcontracting costs/€	Purchase costs - Travel and substistence/€	Purchase costs - Equipment/€	Purchase costs - Other goods, works and services/€	Internally invoiced goods and services/€ (Unit costs-usual accounting practices)	Indirect costs/€	Total eligible costs	Funding rate	Maximum EU contribution to eligible costs	Requested EU contribution to eligible costs/€	Max grant amount	Income generated by the action	Financial contributions	Own resources	Total estimated income
1	UNS	RS	Coordinator	238,490.00	0.00	74,200.00	0.00	84,700.00	0.00	99,347.50	496,737.50	1.00	496,737.50	496,737.50	496,737.50	0.00	0.00	0.00	0.00
2	XXX	C1	Partner	116,100.00	0.00	29,000.00	0.00	17,000.00	0.00	40,525.00	202,625.00	1.00	202,625.00	202,625.00	202,625.00	0.00	0.00	0.00	0.00
3	YYY	C2	Partner	178,300.00	0.00	29,000.00	0.00	16,700.00	0.00	56,000.00	280,000.00	1.00	280,000.00	280,000.00	280,000.00	0.00	0.00	0.00	0.00
			TOTAL	**532,890.00**	**0.00**	**132,200.00**	**0.00**	**118,400.00**	**0.00**	**195,872.50**	**979,362.50**	**3.00**	**979,362.50**	**979,362.50**	**979,362.50**	**0.00**	**0.00**	**0.00**	**0.00**

EXAMPLE OF FUNDED TWINNING PROJECT

GREENELIT

GREENELIT – general presentation

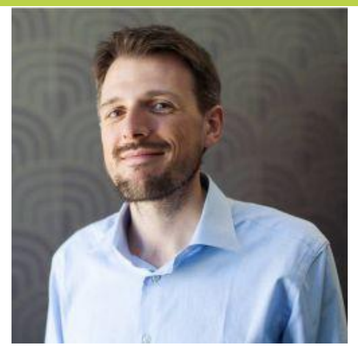
Prof. dr Goran Stojanović, University of Novi Sad, Serbia

Basic information

Title:	**Twinning for reaching sustainable scientific and technological excellence in the field of Green Electronics**
Acronym:	GREENELIT
Grant No.:	951747
Type of action:	H2020-WIDESPREAD-05-2020 - Twinning
Start Date:	01/11/2020
End Date:	31/10/2023
More info:	https://cordis.europa.eu/project/id/951747
Beneficiaries:	(1)University of Novi Sad (UNS); (2) Italian Institute of Technology (IIT); (3) Technical University of Denmark (DTU)

GREENELIT

Motivation – personal story



Dr Mario Caironi, IIT, Italy

around 20 published papers in journals per yea

h-index: 38

2 ERC grants

Dr Alireza Dolatshahi-Pirouz, DTU,

around 12 published papers in journals p

h-index: 28

Lago di Como

Dr Goran Stojanović, UNS, Serbia

around 10 published papers in peer-reviewed journals per year

Motivation for the Project topic

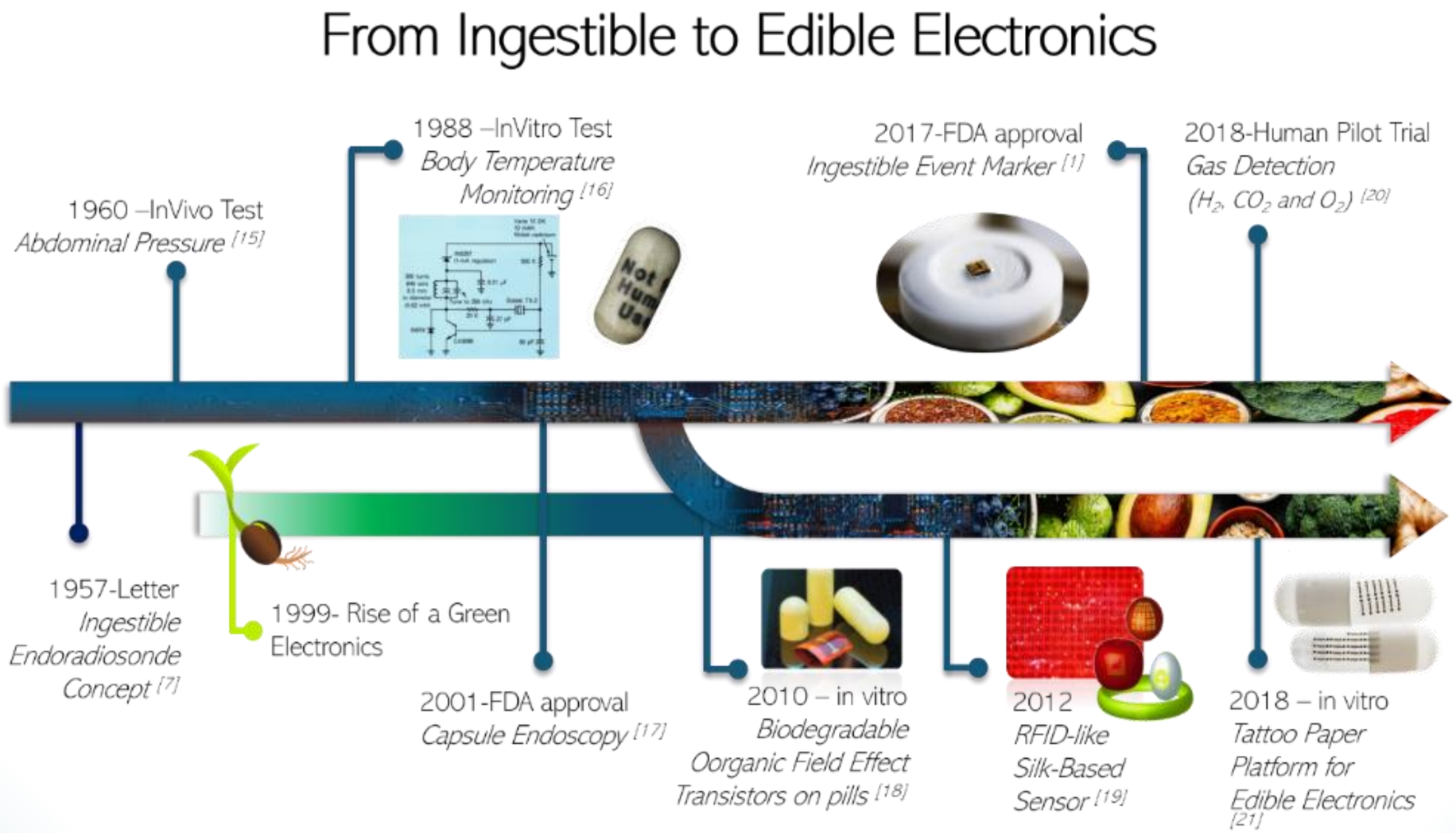
- With the technological development and the expansion of a consumption driven society, the problem of plastic and electronic waste (e-waste) is becoming more urgent.

- Since the mid-1990s, e-waste has been recognized as the fastest-growing category of hazardous solid waste in the world, with the current stream of 50 million metric tons per year.

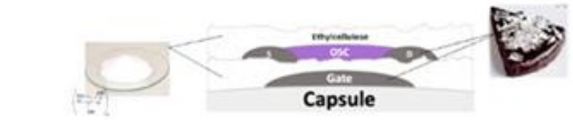
- The recycling activities are not able to keep pace with the global generation of e-waste, what poses severe risks to the environment and human health, and leads to the loss of valuable finite resources.

- Striving to reverse the prevailing destructive cycle and advance into the safe environmentally conscious technological future, electronics finds itself at an inflection point of becoming “green”.

The project domain

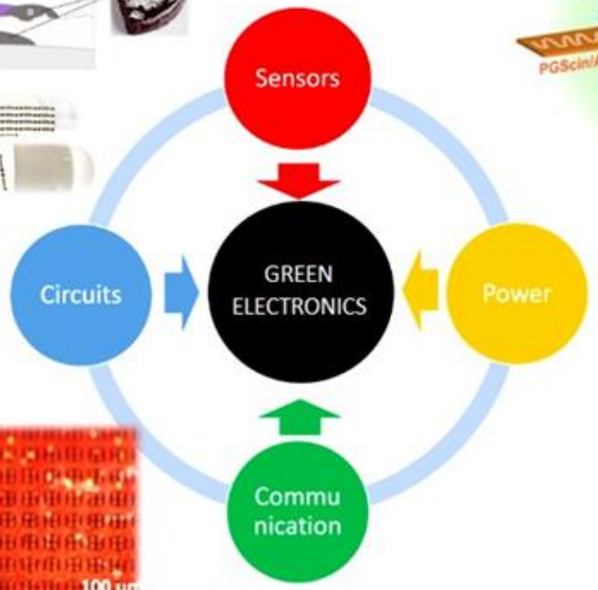


The project domain

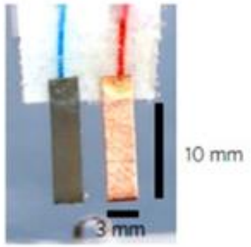


M. Caironi, et al. (IIT), Adv. Mater. 1706091, 2018.

Kim Y. J., et al. J. Mater. Chem. B 1.31 (2013): 3781



Tao H., et al. Adv. Mater. 24.8 (2012): 1067-1072.



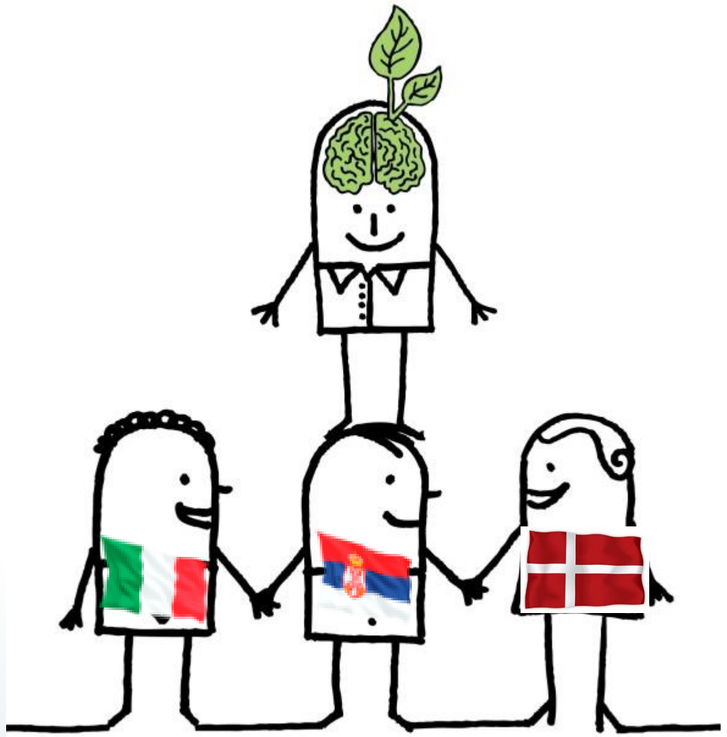
Zn-Cu

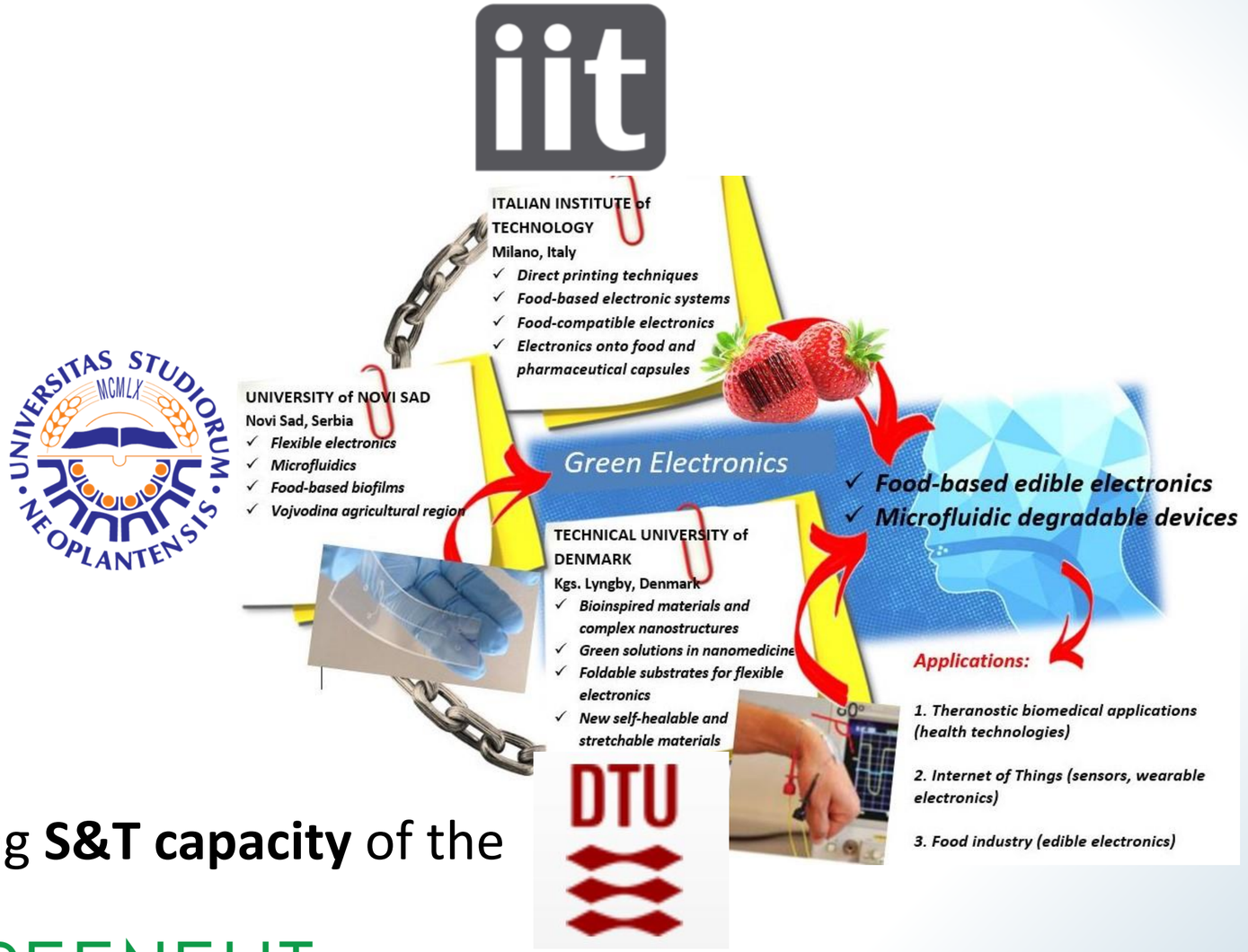
Nature Biomedical Engineering 1, 0022 (2017) DOI: 10.1038/s41551-016-0022

The project domain

Project concept

"If I have seen further, it is by standing on the shoulders of giants"





Institutional networking → enhancing **S&T capacity** of the institutions

GREENELIT

Project objectives

The overall project objective is to decrease research and innovation performance disparities between promising research institution from widening country - the University of Novi Sad (UNS), Serbia and internationally-leading counterparts - the Italian Institute of Technology (IIT), Italy and the Technical University of Denmark (DTU), Denmark, through this twinning action, in the field of Green Electronics.

Specific objectives (*SOs*) are:

SO1: To enhance scientific/technological capacity of UNS and collaboration with EU partners;

SO2: To raise the research profile of UNS and its staff;

SO3: To create the Scientific strategy of UNS for stepping up in the field of Green Electronics;

SO4: To provide training and networking possibilities for ESRs at UNS in the field of Green Electronics;

GREENELIT

SO5: To increase UNS's attractiveness, visibility and its impact on national, regional and EU level.

We have already done...

https://greenelitproject.com

GREENELIT

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As the main research and higher education institution of the Autonomous Province of Vojvodina, Serbia - the University of Novi Sad (UNS) is one of the very rare campus-oriented universities in the South and East Europe. With its inherent diversity (6 official languages and 23 nationalities) and long-lasting tradition in entrepreneurship, the Autonomous Province of Vojvodina (north part of Serbia) has been always in the forefront of the economical development in the region, with the strong ambition to keep this place in future, by supporting new developments and emerging areas in research and technology. The UNS gained significant international reputation as a point of excellence for several areas of modern electronics. These include printable electronics, sensors, microfluidic devices and medical electronics. The initial step in increasing the research potential of UNS with cutting-edge technologies – organic and nano electronics (known as post silicon electronics) has already been achieved.

The IIT participates to the GREENELIT project proposal through the recently established Center for Nano Science and Technology (CNST), located in Milan, where the research line "Printed and Molecular Electronics" is active. CNST, through the "Printed and Molecular Electronics" (PME) line, led by Dr Mario Caironi, has developed a strong expertise in the printed and flexible electronics field, in particular of the processing of organic semiconductors for micro-electronic and opto-electronic applications. PME has a solid know-how in printing technologies of functional materials (e.g. inkjet, flexography, bar-coating, slot-die coating, screen printing) and has developed fully-printed, fully transparent, all polymer, complementary integrated circuits and photodetectors.

DTU is an international elite technical university where education, scientific consulting, and innovation rest on a solid foundation of world-class research. The University is at the academic and multidisciplinary forefront of the technical and the natural sciences—with new initiatives in a number of demanding engineering disciplines, including sustainable energy technology and life science. #TeamBioEngine, at DTU Nanotech is included in this project. Currently, the group is a part of the newly launch department, Health Technology, and their research lies at the crossroads of biology, engineering, physics, chemistry and materials. #TeamBioEngine aim to create advanced material innovations based on bioinspired discoveries, and they believe such bioinspired materials and complex nanostructures will drive the engine of the next big revolution in material science. They are trying to explore interesting green solutions in the fields of nanomedicine, electronics and tissue engineering.

NEWS

GREENELIT NEWS

Kick-off meeting of the GREENELIT project

05/11/2020 0

Tentative month for organization of the Kick-off meeting of the GREENELIT project is January 2021

Twinning Coordinators Day

We have already done...

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Twinning for reaching sustainable scientific and technological excellence in the field of Green Electronics

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GREENELIT Consortium

We have already done...

Not secure | www.uns.ac.rs/index.php/en/vesti-3/7317-uns-centar-zelene-elektronike

COVID-19 Срп 中文

UNIVERSITY OF NOVI SAD

50 years

UNIVERSITY MEMBERS STUDIES SCIENCE INTERNATIONAL COOPERATION CONTACT

THE UNIVERSITY OF NOVI SAD AS A CENTRE OF GRAVITY FOR GREEN ELECTRONICS THANKS TO A NEW H2020 PROJECT

Published: 09 November 2020

GREENELIT

The University of Novi Sad has been granted one more Horizon 2020 project entitled "*Twinning for reaching sustainable scientific and technological excellence in the field of Green Electronics*" – GREENELIT (no. 951747).

The Project aims at significantly strengthening research and innovation capacities of the University of Novi Sad (UNS), Serbia in the emerging field of Green Electronics by twinning action with EU internationally-leading research institutions – Italian Institute of Technology (IIT), Italy and Technical University of Denmark (DTU), Denmark.

Thanks to this project, RDI capacity of the involved institutions will be enhanced and staff's research profile will be improved. Green electronics has no negative impact on the environment at its end of life and can revolutionize the area of biomonitoring.

The coordinator of the GREENELIT project is Prof. Dr. Goran Stojanović, a full professor at the Faculty of Technical Sciences, University of Novi Sad. The starting date of the project is November 1, 2020, with the period of realization in the next three years. The total budget of the projec is 898,800 Euro.

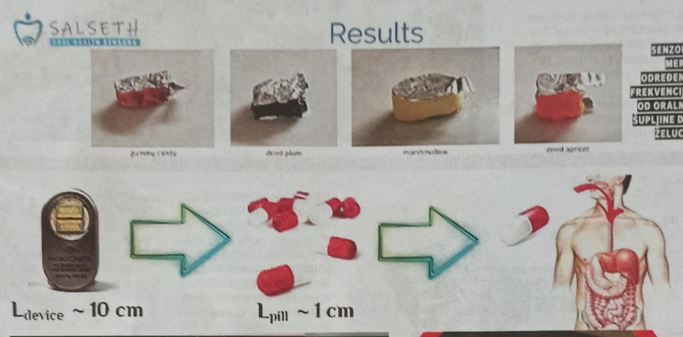
More information can be found on the offial Project web site.

Profesor Stojanović i njegov tim stavljaju Srbiju na svetsku mapu nauke

MAJICE KOJE MERE RAD SRCA, JESTIVA ELEKTRONIKA...

Kada nekome kažemo da može da jede elektroniku ili da može pomoću majice da prati rad srca ili pak da telefonom izda naredbu protezi da detetu opere zube, verovatno bi pomislio da govorimo o nekom naučnofantastičnom filmu.

ZLATKO ČONKAŠ



SENZORI MERE ODREĐENE FREKVENCIJE OD ORALNE ŠUPLJINE DO ŽELUCA

SENZORI OD JESTIVOG MATERIJALA MOGU ZNATNO DA OLAKŠAJU GASTROSKOPIJU

Za primenu u biomedicini dovoljno je da se naš uređaj može progutati. Počeli smo da pravimo senzore od fondana, pasirane jabuke, graška...

Upravo ove i mnoge druge projekte oživeo je lider Grupe za nano i fleksibilnu elektroniku prof. Goran Stojanović sa novosadskog Fakulteta tehničkih nauka.

Njegov tim smislio je mali senzor napravljen od graška, jabuke ili drugog jestivog materijala koji će nakon što ga pacijent proguta bežično beležiti sve biomarkere od usta do želuca te na taj način spasti čoveka od neprijatne gastroskopije. Smislili su i majicu u kojoj su izvezene elektrode za merenje EKG-a, a pokušavaju da pomognu i roditeljima u brizi o autističnoj deci koja nemaju svest o oralnoj higijeni, što se često odrazi na zdravlje njihovih zuba. Razvili su mikrofluidne čipove koji se ugrađuju u proteze dece uz čiju pomoć roditelji svojim mališanima mogu bežično ispirati zube pomoću telefonske aplikacije.

Prof. Stojanović je sa svojim timom voden velikim entuzijazmom i željom za novim otkrićima i usavršavanjem uspeo da Srbiju i naše naučnike visoko kotira u međunarodnim naučnim krugovima jer su u mnogim stvarima pioniri, pogotovo kada je reč o oblasti svarljive elektronike koja je počela da se razvija pre svega par godina.

SVE OD MATERIJALA KOJE JEDEMO

Kako za "Blic" objašnjava prof. Stojanović, naučnici su odavno utvrdili da postojeća elektronika zagađuje životnu sredinu te da se svega 33 odsto elektronskog otpada pravilno reciklira.

– Došli smo na ideju da pravimo elektronske komponente od materijala koje inače jedemo, odnosno da im nademo paralele u jestivim materijalima. Taj projekat smo nazvali Greenelit (zelena elektronika) i prvi smo u svetu razvili kalem čije je jezgro napravljeno od koprive. Kalem se u konvencionalnoj proizvodnji elektronike pravi od gvožđa, a kopriva ima puno gvožđa. Jednostavno, našli smo paralelu i sličnost koja se do sada u laboratorijskim uslovima pokazala odlično – priča nam prof. Stojanović.

Priznaje da se jestiva elektronika za sada ne može takmičiti sa onom klasičnom, barem što se dimenzija tiče, ali je i više nego prihvatljiva u biomedicini zbog niske cene i benefita koje dobijaju pacijenti.

– Za primenu u biomedicini dovoljno je da taj naš uređaj bude veličine zalogaja, odnosno da ga čovek može progutati. Počeli smo da pravimo senzore prvi put od fondana, pasiranih sokova jabuke i graška, od pektina, probali smo i od brašna... Da bi imali svoju funkciju, ti senzori moraju imati neki provodnik struje, a za to koristimo tanke listiće zlata, srebra ili aluminijuma, s obzirom na to da prosečan čovek težine 72 kilograma može dnevno da pojede 1,1 miligram pomenutih materijala, a mi koristimo mnogo manje od toga – kaže naš sagovornik i dodaje:

– Cela ideja je da čovek može da proguta naš senzor i da on meri određene frekvencije od oralne šupljine do želuca. Razvili smo poseban čitač koji bežično očitava te frekvencije na, recimo, laptopu ili mobilnom telefonu i pretvara ih u parametre koji mogu da nam pokažu razne podatke kao što su PHP vrednosti, postojanje ili odsustvo bakterija, krvarenja i mnoge druge stvari. Najbitnije je to što je ovo potpuno neinvazivan način koji može da spase pacijente od mnogih neprijatnih medicinskih zahvata kao što je na primer kolonoskopija.

POMOĆ RODITELJIMA

Prof. Stojanović rukovodi još jednim vrlo zanimljivim projektom pod nazivom "Innovative bio-inspired sensors and microfluidic devices for saliva-based theranostics of oral and systemic diseases", sa akronimom SALSETH, i on se prema njegovim rečima bavi razvojem senzora za detektovanje važnih parametara i biomarkera u usnoj duplji, kao i razvojem mikrofluidnih uređaja za neinvazivnu terapiju.

– U sklopu ovog projekta sa stranim partnerima razvijamo mikrofluidne uređaje integrisane u fiksne proteze za zube ili u zubne štitnike koji će u određenim vremenskim intervalima isporučivati antiseptik ili esencijalna ulja na biljnoj osnovi i time održavati higijenu u usnoj duplji i očuvati ukupno zdravlje čoveka. Primarni nam je cilj da pomognemo ljudima koji iz bilo kojih razloga imaju poteškoća u održavanju oralne higijene i zdravlja usne šupljine. Autistična deca recimo nemaju svest o oralnoj higijeni i često se to odrazi na zdravlje njihovih zuba. Pomoću ovih naših čipova, bežično možete da ispirate zube, preko telefona, na primer na svakih šest sati ili da ispuštate eterična ulja.

Tako spajanjem elektronike i samih tehnika u dentalnoj medicini možemo da pomognemo mnogo poboljšnju oralnog zdravlja, a samim tim i sistemskom zdravlju – ističe prof. Stojanović uz napomenu da to i jeste svrha nauke, da poboljša kvalitet života.

Još jedan zanimljiv projekat prof. Stojanovića i njegovog tima svakako je STRENTEX sa ciljem da Fakultet tehničkih nauka Univerziteta u Novom Sadu postane vodeća institucija u ovom delu Evrope u oblasti rastegljive i tekstilne elektronike za primene u biomedicini.

MAJICE MERE EKG

– U sklopu projekta planirano je da se razviju elektrode za merenje EKG-a koje će biti direktno izvezene u recimo majice sportista bez potrebe da se spolja povezuju elektrode za EKG uređaj kako se to danas radi. Takođe, planirano je da se u nosiljkama za bebe ugrade u sam tekstil senzori za merenja vlage, temperature i broja otkucaja srca bebe, kako bi beba konstantno bila u adekvatnim uslovima, a roditelji i medicinski radnici na vreme bili upozoreni u slučaju bilo kakvih neželjenih okolnosti. Planiran je i razvoj pametnih zavoja sa mikrofluidnim rezervoarima za isporuku leka direktno na hronične rane – otkriva nam prof. Stojanović. ■

DONEO FTN-U I NOVOM SADU 7,4 MILIONA EVRA SREDSTAVA IZ EU

Vrednim radom i upornošću prof. Stojanović je do sada realizovao preko 50 projekata, od kojih je nekoliko u toku, a za dvadesetak projekata je zajedno sa svojim timom na FTN u Novi Sad doneo preko 7,4 miliona evra bespovratnih sredstava iz fondova Evropske unije.

– Prethodnih 15 godina posvetio sam ukazivanju na značaj pisanja kompetitivnih naučnih projekata. Svim tim projektima smo trajno promenili sliku o nama na bolje u Evropi i u očima studenata. Naše laboratorije, znanje, oprema, idu rame uz rame sa vodećim evropskim centrima u oblasti zelene, savitljive, tekstilne elektronike. Mi smo njima poželjan partner za buduće projekte. I to je strateški put našeg razvoja. Zato se treba izboriti za postojeće fondove. U praktičnim oblastima kojima se mi bavimo, mi ne možemo zasnivati naš rad na laptopu i glavi i mozgu, nego i na močnoj opremi koja je skupa, zbog čega su nam EU programi preko potrebni. Ide se po vodu tamo gde je izvor. Ako postoji program EU Komisije koji vredi skoro 80 milijardi evra, kao što je npr. HORIZON, mi naučnici iz Srbije treba da budemo obučeni da deo tog novca donesemo u našu zemlju i razvijamo nauku ovde – poručuje profesor.

What is influenced by COVID-19

Task 1.1 Staff exchanges from UNS to IIT & DTU

Sending inst.	Host inst.	No. of visits	Duration (months)	Total (months)
UNS →	IIT	3	2	6
UNS →	DTU	3	2	6

Task 1.2 Staff exchanges from IIT & DTU to UNS

Sending inst.	Host inst.	No. of visits	Duration (month)	Total (months)
IIT →	UNS	3	1	3
DTU →	UNS	3	1	3

Other H2020 projects

AQUASENSE

https://www.aquasense-itn.com/

SALSETH
ORAL HEALTH SENSORS

http://www.salsethproject.com/

Strentex
our path of excellence

https://www.strentexproject.com/

WBC-RRI.NET
Responsible Research and Innovation in the Western Balkans

https://wbc-rri.net/

https://www.stojanovicgoran.com/

Contact information

UNS Scientist in charge:
Prof. Dr Goran Stojanović
Faculty of Technical Sciences
University of Novi Sad
Trg Dositeja Obradovića 6
21000 Novi Sad
Serbia

Email: gstojanovic72@yahoo.com

Mob: +381 64 3905715

EVALUATION OF THE PROJECT PROPOSALS

Usually 8 panels for evaluation

Submitted (eligible) project proposals will normally be evaluated by one of eight 'main evaluation panels':

1. Chemistry (CHE),
2. Social Sciences and Humanities (SOC),
3. Economic Sciences (ECO),
4. Information Science and Engineering (ENG),
5. Environment and Geosciences (ENV),
6. Life Sciences (LIF),
7. Mathematics (MAT),
8. Physics (PHY).

Evaluating the excellence criterion (1/2)

Assess the project's objectives:

- Are they clear and pertinent to the topic?
- Are they measurable and verifiable?
- Are they realistically achievable?
- Is the proposed work ambitious and goes beyond the state-of-the-art?
- Does the proposal include ground-breaking R&I, novel concepts and approaches, new products, services or business and organisational models?
- Is the R&I maturity of the proposed work in line with the topic description?

Please bear in mind that advances beyond the state of the art must be interpreted in the light of the positioning of the project. For example, expectations will not be the same for RIAs at lower TRL, compared with the Innovation Actions at high TRLs.

Evaluating the excellence criterion (2/2)

Assess the scientific methodology:

- Is the scientific methodology (i.e. the concepts, models and assumptions that underpin the work) clear and sound? Is it in compliance with the 'do no significant harm approach?'
- Is it clear how expertise and methods from different disciplines will be brought together and integrated in pursuit of the objectives? If applicants justify that an inter-disciplinary approach is unnecessary, is it credible?
- Has the gender dimension in research and innovation content been properly taken into account?
- Are open science practices implemented as an integral part of the proposed methodology?
- For the research data management properly addressed?
- For topics indicating the need for the integration of social sciences and humanities, is the role of these disciplines properly addressed?

IMPACT EVALUATION

IMPACT CRITERION

aspects to be taken into account

- Credibility of the pathways to achieve the expected outcomes and impacts specified in the work programme, and the likely scale and significance of the contributions due to the project.
- Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities

STRUCTURE OF THE IMPACT SECTION

- Projet's pathways towards impact
- Measures to maximise impact - Dissemination, exploitation and communication

Evaluating the Quality of Implementation – Work Plan

Assess the proposed work plan, and the effort and resources:

- Is the work plan of good quality and effective?
- Does it include quantified information so that progress can be monitored?
- Does it follow a logic structure (for example regarding the timing of work packages)?
- Are the resources allocated to the work packages in line with their objectives and deliverables?
- Are critical risks, relating to project implementation, indentified and proper risk mitigation measures proposed?

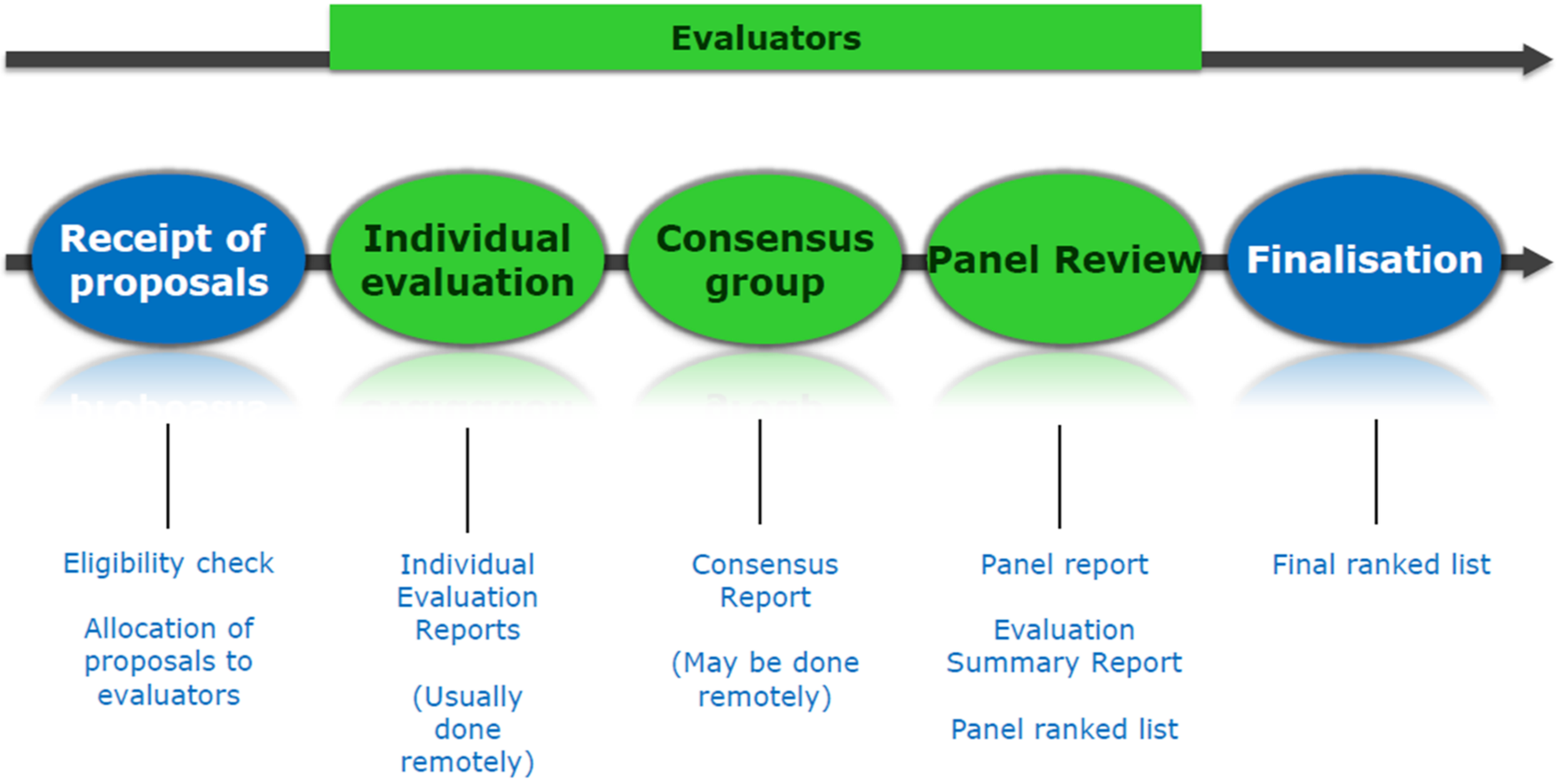
Evaluating the Quality of implementation – Participants and consortium

Assess the quality of participants and the consortium as a whole:
(Note that important information on role of individual participants and previous experience is included in part A of proposal)

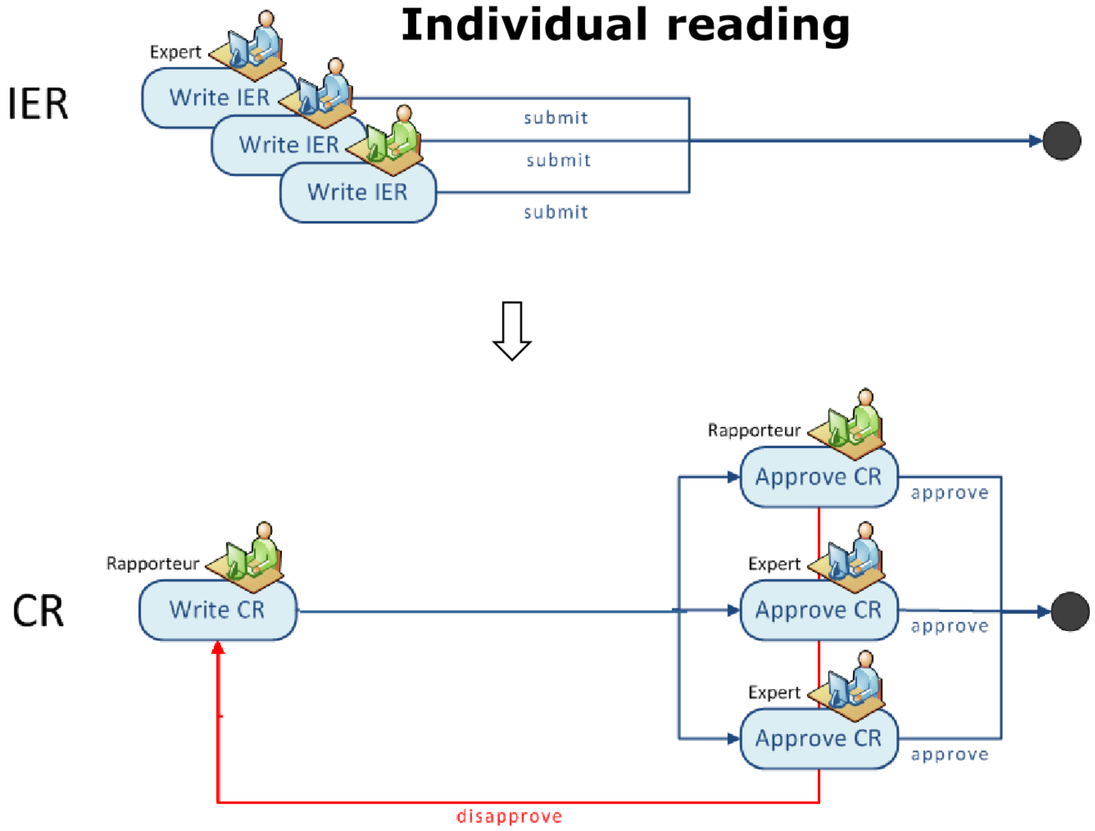
- Does the consortium match the projects' objectives, and bring together the necessary disciplinary and interdisciplinary knowledge.
- Does the consortium include expertise in open science practices, and gender aspects of R&I, as appropriate?
- For topics flagged as SSH relevant, does the consortium include expertise in social sciences and humanities?
- Do the partners have access to critical infrastructure needed to carry out the project activities?
- Are the participants complementing one another (and cover the value chain, where appropriate)
- In what way does each of them contribute to the project? Does each of them have a valid role, and adequate resources in the project to fulfil that role (so they have sufficient operational capacity)?
- Is there industrial/commercial involvement in the project to ensure exploitation of the results?

Participants' previous publications, in particular journal articles, are expected to be open access and existing datasets FAIR and 'as open as possible, as closed as necessary'.

Overview of the evaluation process



Evaluation process



Each proposal is read independently by at least 3 experts and evaluated under 3 criteria: Excellence, Impact, Quality and efficiency of the implementation.

Each expert writes an (IER) Individual Evaluation Report

Consensus Report (CR)

Scoring

0	The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.
1	**Poor.** The criterion is inadequately addressed, or there are serious inherent weaknesses.
2	**Fair.** The proposal broadly addresses the criterion, but there are significant weaknesses.
3	**Good.** The proposal addresses the criterion well, but a number of shortcomings are present.
4	**Very Good.** The proposal addresses the criterion very well, but a small number of *shortcomings are present.*
5	**Excellent.** The proposal successfully addresses all relevant aspects of the criterion. *A*ny shortcomings are minor.

Evaluation Summary Report

Proposal Evaluation Form

EUROPEAN COMMISSION

Horizon 2020 - Research and Innovation Framework Programme

Evaluation Summary Report - Coordination and support actions

Call: H2020-WIDESPREAD-05-2017-Twinning
Funding scheme: CSA
Proposal number: 810162
Proposal acronym: INCOMING
Duration (months): 36
Proposal title: INnovation and excellence in massive-scale COMmunications and information processING
Activity: 2017 Twinning

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	UNIVERZITET U NOVOM SADU FAKULTET TEHNICKIH NAUKA	RS	435,875	43.74%	435,875	43.74%
2	AALBORG UNIVERSITET	DK	175,571.25	17.62%	175,571.25	17.62%
3	CHALMERS TEKNISKA HOEGSKOLA AB	SE	220,571.25	22.13%	220,571.25	22.13%
4	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	DE	164,533.75	16.51%	164,533.75	16.51%
	Total:		996,551.25		996,551.25	

Abstract:
Massive-scale data acquisition and information processing for large intelligent infrastructures, such as smart grids, smart transportation or smart industry, underpins the emerging fourth industrial revolution. 5G mobile networks and mobile edge computing (MEC) will provide communication and computation platform for such intelligent infrastructures to become a reality. Recognizing the need for expertise and leadership in this domain, with onward looking goal to support rapidly growing regional ICT sector, Faculty of Technical Sciences of the University of Novi Sad (Serbia) established the Centre for intelligent COmmunications, Networking and Information proCessing (iCONIC). iCONIC collects strong research team with a vision to become regional hotspot for 5G research and innovation, focusing on massive Machine-Type Communications, Large-Scale Distributed Information Processing, and Reconfigurable Hardware Design. INCOMING project (Innovation and excellence in massive-scale COMunications and information processING) lays out ambitious research-intensive and innovation-oriented plan to make the iCONIC centre regional 5G lighthouse by twinning it with Aalborg University (Denmark), Chalmers University of Technology (Sweden) and German Aerospace Centre (Germany). INCOMING will use staff exchanges, expert trainings, summer schools and workshops to boost the research excellence of iCONIC staff members. The twinning program will gradually shift focus from research to innovation-driven implementation of the promising research outcomes. As part of the project, iCONIC will set up 5G Innovation and Technology Hub (5G-IT-Hub) as an interface towards the regional ICT sector, bridging high-quality iCONIC research with thriving regional ICT innovation scene. With the help of EU partners, INCOMING will put the iCONIC centre on the European map of emerging research-intensive 5G centres, while via 5G-IT-Hub, iCONIC will become integral part of regional ICT innovation activites.

Evaulation Summary Report

Evaluation Summary Report

Evaluation Result

Total score: 14.00 (Threshold: 10)

Form information

SCORING

Scores must be in the range 0-5.

Interpretation of the score:

0? *The* ***proposal fails to address the criterion*** *or cannot be assessed due to missing or incomplete information.*

1? Poor. *The criterion is inadequately addressed, or there are serious inherent weaknesses.*

2? Fair. *The proposal broadly addresses the criterion, but there are significant weaknesses.*

3? Good. *The proposal addresses the criterion well, but a number of shortcomings are present.*

4? Very good. *The proposal addresses the criterion very well, but a small number of shortcomings are present.*

5? Excellent. *The proposal successfully addresses all relevant aspects of the criterion.Any shortcomings are minor.*

Criterion 1 - Excellence

Score: **4.50** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work programme:
Clarity and pertinence of the objectives
Soundness of the concept, and credibility of the proposed methodology
Quality of the proposed coordination and/or support measures

The project objectives are clear and achievable, focusing on research excellence, innovation capacity, integration and visibility, with metrics to measure and increase research performance of promising research institutions. The project aims to link the widening institution with

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internationally-leading research partners who have previous published work in 5G and are actively participating in international projects.

The concepts of the project are credible and realistic with a good description of the 5G area the project intends to focus upon. The scientific strategy and methodology approach are sufficiently detailed and achievable through staff exchanges, training events, networking and through the creation of a technology hub. However, the lack of a detailed technical focus from the institution of the widening country means that the technological targets are not clear enough.

The proposal shows a large number of foreseen collaborations with national authorities and institutions within the widening country. The research and innovation activities and links to projects outside of the INCOMING project are well addressed in terms of the number of workshops, training sessions, summer schools planned for the project. The creation of a technology hub is well suited to enhancing the profile of the widening entity and to increase their research and innovation capacity.

Criterion 2 - Impact

Score: **5.00** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account:
The extent to which the outputs of the project would contribute to each of the expected impacts mentioned in the work programme under the relevant topic
Quality of the proposed measures to:
- exploit and disseminate the project results (including management of IPR), and to manage research data where relevant
- communicate the project activities to different target audiences

The expected impact is very well described in the proposal and should allow improvement in the quality of research in massive-scale data acquisition and large-scale information processing algorithms in 5G networks at the widening country institution. This project will enhance international collaboration at European level and the capacity to apply for future funding in this scientific area. Each partner brings different expertise, which will help the widening entity to reduce networking gaps and deficiencies. The proposal identifies clear metrics to measure enhanced S&T capacity of the institutions of widening countries, as well as economic impact.

The dissemination plans of project results are very thorough and very convincing in terms of publications in conferences and journals. The communication plans for public engagement activities to wider audience are also well described. Furthermore, data and IPR management issues are appropriately presented.

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Criterion 3 - Quality and efficiency of the implementation

Score: **4.50** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account:
Quality and effectiveness of the work plan, including extent to which the resources assigned to work packages are in line with their objectives and deliverables
Appropriateness of the management structures and procedures, including risk and innovation management
Complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise
Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role

The resources proposed for the completion of the tasks and WPs are in line with the proposed actions in terms of workshops, conferences, summer schools, staff exchange, etc. The number and frequency of deliverables are also adequately outlined in the proposal, all of which will be made available to the wider public. However, the effort allocated to work packages 2 and 3 has not been well enough justified in the proposal.

The management structure is very convincing. However, it is not clear how the quality control will be implemented regarding scientific publications relating to this action. Risk management issues are broadly developed; however, technical risks are not fully enough developed in the proposal. The existence of an external advisory board, with proposed top ranked experts in the domain of the project, is particularly important.

The consortium is balanced and the partners have good skills/background in the topics addressed in the proposal.

The allocation of tasks is very detailed and appropriate to ensure effective execution of the project. All partners have valid roles and adequate resources to complete their assigned activities. The budget for travel and other direct costs is also justified.

Most Frequent Mistakes

Most Frequent Mistakes in Excellence section

Objectives are too generic and vague / not clearly specified with regard to networking gaps and deficiencies of cooperation with internationally leading counterparts

Proposed methodology lacks proper SWOT analysis

- travels are considered as threats
- explanation of strengths and weaknesses of the coordinating institution justifying proposed methodology is not provided

Description of methodology is weak and lacks enough detail / models and assumptions are not sufficiently clear

Proposed concept is not sufficiently described and therefore is not credible

Clear scientific strategy is missing / consists of a too extensive variety of research areas

Most Frequent Mistakes in Impact section

How improved capability to apply for competitive research funding will be reached is insufficiently elaborated / increased research excellence and attractiveness is not considered
Most of the planned activities could be performed without involvement of other partners

DoE activities are described in general terms / mostly targeting national level

No coordinated strategy for dissemination to scientific community
initiating dialogue with policy makers or boosting engagement with industry is not considered
More measurable indicators for proposed dissemination activities should be included

Measures for communication during and after the project are insufficiently planned

Most Frequent Mistakes in Implementation section

Work packages are not in line with objectives

Work packages are not interdependent

Possible risks are not set out convincingly / are limited / are underestimated
all critical risks are not addressed / risk and innovation management are poorly described

Complementarity is not demonstrated clearly and adequately / partners have significantly overlapping expertise / choice of partners is not clearly justified / no explanation of synergies and complementarity of consortium

Tasks are not adequately distributed to partners / tasks lack details and justification

Questions and Answers

Thank you for your attention!

Acknowledgment to EC and Publication office of the European Union

Publication Office
of the European Union