

# Konkretno izkušnje internacionalizacije SRIP Zdravje-medicina

(Dogodek NOVOSTI V ZDRAVSTVENIH SISTEMIH ZA NJIHOVO VEČJO UČINKOVITOST)

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Ljubljana, 15. november 2022

## VSEBINA

1. Slovenska strategija pametne specializacije: SRIP Zdravje medicina
2. Odmevni uspehi naših članov
3. Internacionalizacija in "srebrna ekonomija"

## Naše vrednote: Medsebojno zaupanje in spoštovanje



### Delovanje SIS EGIZ v dolgoročnem smislu

S povezovanjem ustvarjalnih potencialov, s spodbujanjem inovativnosti, z ustvarjanjem stimulativnega razvojnega in poslovnega okolja želimo prispevati k izboljšanju povezovanja znanosti, gospodarstva in družbe ter k ustvarjanju in komercializaciji znanj na naslednjih temah:

- naravoslovno – tehniški kampus UL (FFA in FS, Biotehnoško stičišče, TPLJ),
- povezovanje na osi Trst – Nova Gorica – Ljubljana – Zagreb – Maribor – Gradec,
- izgradnja mreže slovenskih univerz, inštitutov in UKC-jev v delajoč sistem,
- opredelitev RR prioritet, financiranje vsaj nekaj velikih R skupin,
- vzpostavitev dodatnih Centrov za prenos znanja,
- postati generator start-upov z visokim potencialom rasti,
- revitalizacija obstoječih inovativnih podjetij,
- vlaganja v nova in revitalizirana podjetja in raziskovalne organizacije.

## Slovensko inovacijsko stičišče

### Medicinska dolina (MD) PROJEKTI

Raziskovalno središče na področju biotehnologije – NIB  
Fakulteta za farmacijo - FFA  
Fakulteta za strojništvo – FS  
Naravoslovno tehnički center (IJS, KI)  
Center za biomedicinske študije (Vipava)  
Baterije za posebne aplikacije (KI)  
Medicinska robotika, AI  
Sodobni dostavnici sistemi in AI  
Sodobni energijski sistemi – GEN-I  
Sodobne terapije – STEM, proizvodnja  
Center za gensko in celično terapijo – KI

### SRIP Zdravje - medicina

Biofarmacevtika

Naravna zdravila in  
kozmetika

Zdravljenje raka

Aktivno in zdravo staranje

Translacijska medicina

Personalizirana  
medicina → VI  
SMART HEALTH

Odporne  
bakterije

Redke  
bolezni

Senior  
ECO-NECT

### Strateške aktivnosti

RS Slovenia EIP on AHA – 3\*

Mreža za kakovostno staranje

Internacionalizacija TIM

Inovacijski ekosistem

Nano-platforma

Kitajsko – slovenski center  
(začenja delovati – letni načrt za 2022)

Študije poslovnega okolja

ICPT, RC Advance – R Center, protonsko obs.

Medicinski pripomočki?

Napredna protetika

Nova bivalna okolja za starejše Academic Village

**MD** = Adria Alps BioHealth  
**Innovation Hub** = start-up generator

IN4AHA

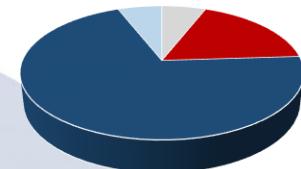
SREBRNA  
EKONOMIJA

# SRIP Zdravje-medicina

Strategic Research Innovation Partnership **Health – Medicine** is dedicated to achieving Strategy's goals and in collaboration with other stakeholders contribute to:

- Connecting the creative and ambitious to improve healthcare and create higher value added,
- identifying new business opportunities, promising technologies and big projects,
- creating opportunities for new projects,
- supporting the stars of tomorrow,
- trying to identify future competences and skills,
- influencing legislation.

51 partners from quadruple helix joined their competencies and created SRIP



■ Education ■ R&D ■ Business ■ NGO

# PRILOŽNOST

Danes v Evropi zdravstveni sistemi kolabirajo, ko tisoč ljudi sočasno nujno potrebuje zahtevno nego. Če bi lahko hitreje in učinkoviteje zdravili državljane ter celo preprečili nastanek bolezni, potem bi imeli priložnost dvigniti kakovost življenja, znižati stroške javnega zdravstva in podaljšati število zdravih let globoko v starost.

## Kaj je novega na tem področju?

- 1 | Nove tehnologije zdravljenja so dozorele, COVID jih je pospešeno pripeljal na trg**  
Nova cepiva vnašajo v uporabo gensko terapijo, ki je ena izmed novih možnosti hitrega in do 25% učinkovitejšega zdravljenja najtežjih bolezni. Biološka in celična zdravila prinašajo podobne preskoke.
- 2 | Prebivalstvo se stara, obstoječa zdravila izgubljajo učinkovitost**  
Delež starostnikov v družbi se povečuje, potrebujejo več oskrbe, za kar zdravstveni sistemi niso dimenzionirani. Antibiotiki postajajo manj učinkoviti na bakterije, ki so se prilagodile nanje.
- 3 | Projekcija 3-5 milijard EUR učinkov za javno zdravstvo in gospodarstvo**  
SRIP Zdravje – medicina je povezal 50 partnerjev v 22 projektih, vrednih 1,03 milijarde EUR investicij do 2030, skozi katere se načrtuje nastanek 3-5 novih zdravil, 1 center za zdravljenje in 2 proizvodni verigi.

Ta dokument povzema problematiko področja Zdravje – medicina, je interne narave in nezvezujoč.

Vse navedbe so informativne in ne predstavljajo zavezajoče napovedi pričakovanih rezultatov.

# TEŽKO VSTOPITI NA TRG, VELIKA RAZDROBLJENOST

Novi medicinski izdelki zahtevajo specialistična znanja, ki nimajo finančne zaslombe

Ključni dejavnik uspeha je ne zapraviti zaupanja partnerjev v interes in sposobnost Slovenije, da prebojne medicinske projekte uporabi v dobro lastnega javnega zdravstva in gospodarstva.

## BISTVENI PROBLEMI

### ► **Zdravila, terapije, centri za zdravljenje zahtevajo veliko partnerjev**

Na primer razvoj zdravil iz konoplje, ki ne sodi med najbolj zahtevne predlagane projekte z vidika tehnologije in infrastrukture, potrebuje 26 visoko usposobljenih partnerjev za izvedbo.

### ► **Zgodnje faze so tvegane raziskave, poznejše klinične študije dolgo trajajo**

Znanstvene podlage, s katerimi razpolaga Slovenija so nastajale 20-30 let brez garancije uspeha. Premikanje teh spoznanj proti trgu zahteva poleg industrializacije idej tudi večletno klinično testiranje. Projekt Smart Gene je v prvi fazi kliničnih študij, ki trajajo 5 let in stanejo 4 M EUR.

### ► **Druge države iščejo in privabljajo slovenske projekte**

Ministrstva za zdravje in nacionalni organi za kohezijsko politiko sosednjih držav aktivno iščejo projekte, ki jih lahko z minimalnim tehnološkimi naporom prevzamejo v vlogi nosilca. Proizvodnja konoplje so odpeljali Angleži, center za protonsko obsevanje, 120M EUR vreden projekt si prizadevajo pridobiti v Bolgariji, kjer je poleg kohezije tudi veliko aktivnosti Evropske investicijske banke.

SRIP ZDRAVJE MEDICINA je povezal 50 partnerjev v 22 projektih za prenos novih tehnologij in načinov zdravljenja iz laboratoriјev na trg. Projekti potekajo ali iščejo institucionalnega državnega partnerja v Evropi.

# PRIORITETNA VPRAŠANJA PARTNERJEV

- REŠEVANJE AKTUALNIH BOLEZNI, KI SE POVEČUJEJO V OBSEGU

ZDRAVLJENJE RAKA

KRONIČNE BOLEZNI

ODPORNE BAKTERIJE

**ZDRAVLJENJE RAKA**

**TRANSLACIJSKA MEDICINA**

- UVAJANJE NOVIH TERAPIJ IN MODALITET ZDRAVLJENJA

CELIČNA IN GENSKA  
TERAPIJA

**BIOFARMACEVTIKA**

NARAVNA ZDRAVILA

**NARAVNA ZDRAVILA IN  
KOZMETIKA**

- PRIPRAVA ZDRAVSTVA NA PRIHODNOST

AKTIVNO ZDRAVO STARANJE

**AKTIVNO ZDRAVO STARANJE**

MEDICINSKI PRIPOMOČKI



# POTENCIJAL ZA VEČ PROJEKTOV ZNOTRAJ STRATEGIJE PAMETNE SPECIALIZACIJE

Preseneča dejstvo, da je doslej na vseh razpisih za spodbujanje in izvajanje S4, bilo le 6 % vseh sredstev namenjeno za področje Zdravje – medicina. Od tega niti ne vse članom SRIP-a.

Predlagamo, da se za namene izkoriščanja tržnega potenciala področja in sočasnega znižanja stroškov za javno zdravstvo, nameni v prihodnje večji delež sredstev za projekte iz tega področja.

Na ta način se podpirajo tudi druga SRIP področja, ker so projekti znotraj Zdravje – medicina visoko tehnološke narave in ustvarjajo potenciale tudi za druge panoge (od telekomunikacij, pametnih rešitev, proizvodnje in certificiranja naprav za aktivno starejšo populacijo).

Projekti, ki najdejo tovrstno podporo drugod pogosto zapustijo Slovenijo. Tisti, ki zamudijo okno priložnosti pa zapravijo ves vloženi čas v preteklosti, ki je v primeru razvojnih organizacij v resnici zavračanje že opravljenih vlaganj v javne sisteme.

Zato predlagamo, da se v prihodnje čim več tovrstnih potencialov izkoristi za ustvarjanje vrednosti in gospodarskega napredka Slovenije.

# INTERNACIONALIZACIJA

Sodelovanje v mednarodnih združenjih za podporo prenosa inovacij na trg

Članstvo v superclustru Twin International Multihelix TIM



Life Sciences Hub | Canarian Gaoyitouzi Biyoud | Wies Comms



SIH EEIG a member of S3P4PM Personalized Medicine Platform led by Flemish Government – Department Economy, Science and Innovation

<https://s3platform.jrc.ec.europa.eu/personalised-medicine>

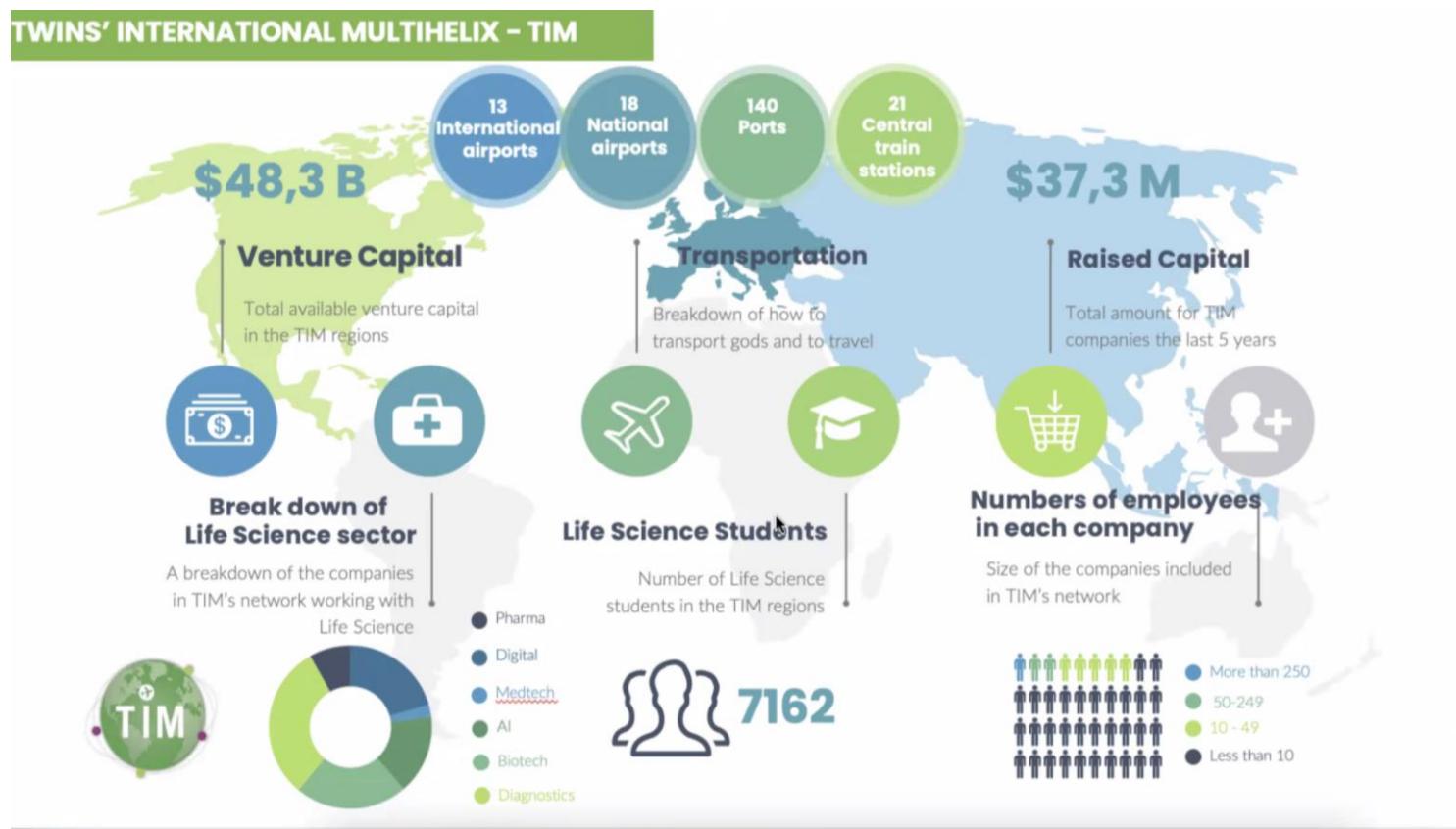


Vanguard Initiative  
SMART HEALTH pilot  
MOBILE HEALTH ( R ) EVOLUTION

ECH Alliance

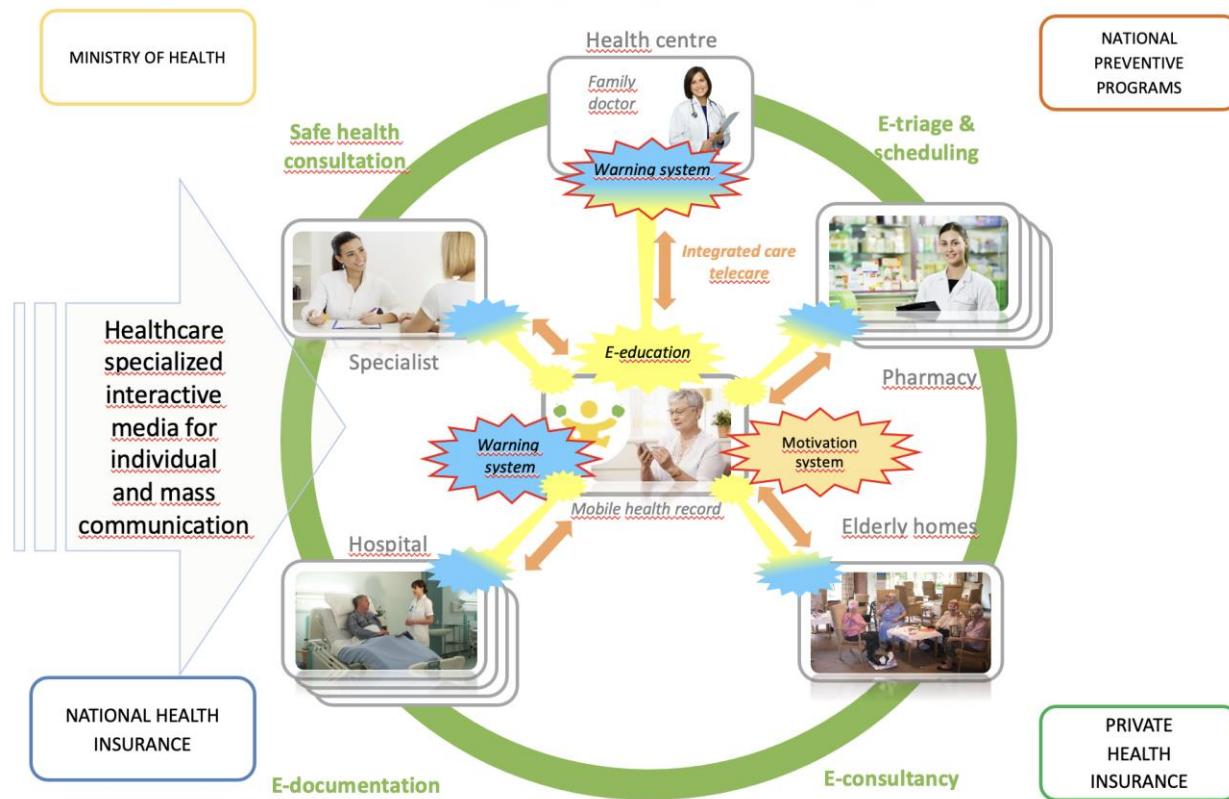


## Supercluster TIM



# Mobile health ( R )evolution- Vanguard Initiative- Smart Health pilot: person-centred approach

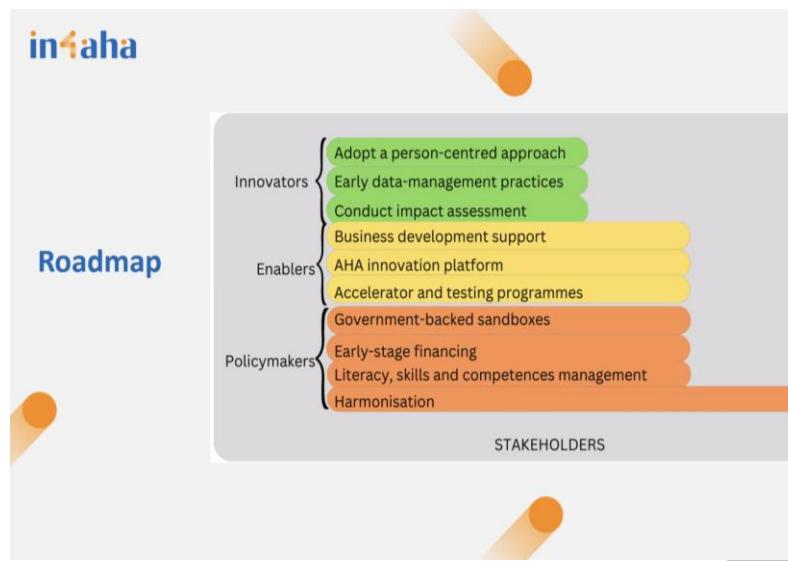
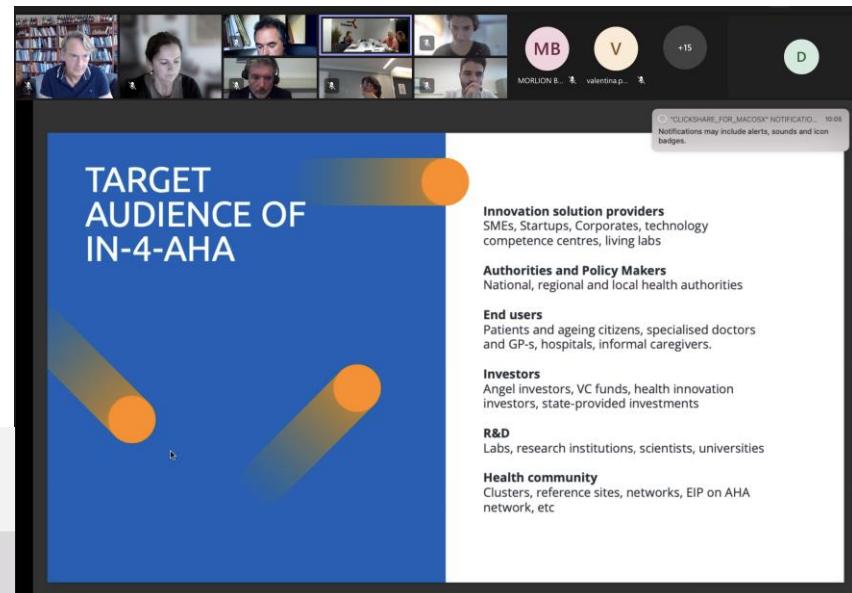
Communication and information technology empowers patient, enables teamwork, increases efficacy, quality and safety of healthcare services



# Mreža 65 referenčnih mest v EU – medsebojno učenje in izmenjava dobrih praks na področju izboljšav oskrbe starejših



# EU projekti – IN4AHA





## Scoping Emergence & Interconnectivity in Silver Economy Ecosystems

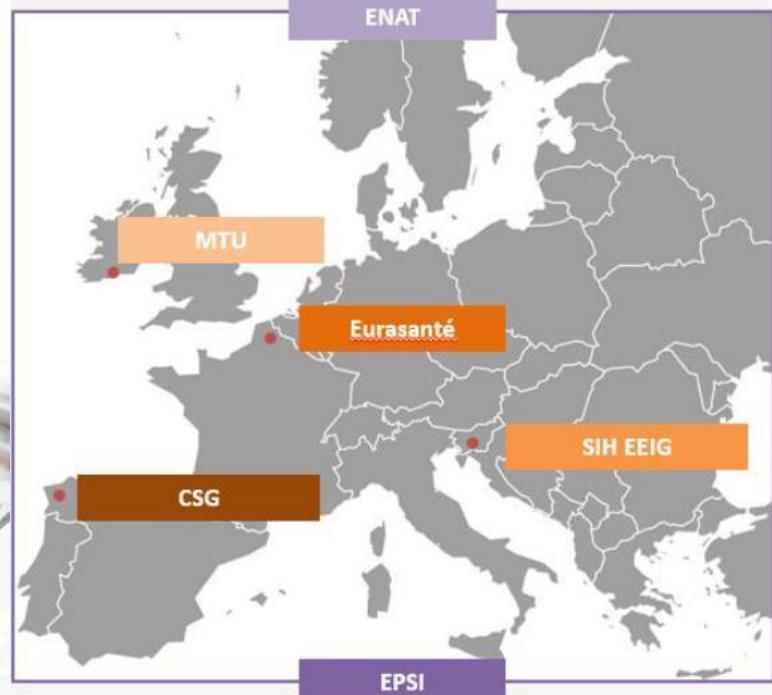
The Hincks Centre for Entrepreneurship Excellence invites you to take part in an online event on **Monday 7th Nov 09:30 - 10:30 Irish Time [CET 10:30 - 11:30]**

*Explore how we can support and encourage emergence for diverse entrepreneurial sectors and how we can interconnect ecosystems in the silver economy to meet the needs of older people.*

*Learn about a recognised interconnectivity good practice, discussion breakout rooms will establish and share existing knowledge of good practices and barriers to silver sector emergence and interconnection.*

*We look forward to seeing you there.*

Register now at <https://tinyurl.com/4vf38xae>



**Figure 1 – Geographic map of the consortium**

PARTNERS:



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MTU



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# Challenges of Demographic Change in Europe and in Regions



## Scarcely populated areas and lower connectivity

**Long-term care needs are rising rapidly with acute staff shortages**

### **Lack of age-friendly living and working environments**

### **Slow transition to family- and community-based care services**

**Social and educational inequalities in life expectancy are rising (3.4 F & 6.9 M)**

## **Gap in digital skills for healthcare workforce and citizens/patients**

#### **Additional COVID-19 challenges (isolation, mental health)**

#### **Lack of uptake of digital innovations and eServices**

**Homecare services at full market cost are unaffordable for 75 % of older persons**

**Less than 3% of total health expenditure to prevention**

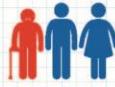


**The Commission's Demography Report** presents the main drivers of demographic change and the impact they are having across Europe. It launches a process that will help identify concrete actions and solutions, mindful of lessons learned from COVID-19, to support people, regions and communities that are most affected and to enable them to adapt to changing realities.



# The Silver Economy

Europe is ageing



By 2060 one in three Europeans will be over 65

Today

2060

The ratio of working people to the 'inactive' others is shifting from 4 to 1 today to 2 to 1 by 2060



Costs for care are rising sharply. If we don't change our systems for health and social care, we will not have the money and the people to guarantee a good and healthy life for all



If we reinvent our systems for health and social care, innovative new ICT-products and services can help us deliver better and cheaper care for all



Electronic Health Record

General Practitioner monitors online progress



Social Services activate regular visits of carer and social worker



Europe has what it takes to benefit from these new opportunities



A solid R&D base in European industry

New ICT products such as care robotics



Health mobile applications that assist with tracking



Big pharma companies are developing integrated therapeutic solutions



The Silver economy offers new highly skilled tech jobs



but also the opportunity for low qualified population to reskill

[bitly/SilverEcoEU](http://bitly/SilverEcoEU)

# Silver Economy

- The European Commission has launched a [Silver Economy strategy](#). It is estimated that by 2060 at least one in three Europeans will be over 65. If we take the right measures, the economy can grow, because Europe boasts an innovative ICT industry with both large companies and innovative SMEs, developing many new products and services.
- It is estimated that Active Ageing in good health will allow older people to:
  - travel more,
  - work longer,
  - learn new things
  - live independently in our own homes.
- Innovative new digital technologies and services can help us deliver:
  - better and cheaper care for all
  - integrated therapeutic solutions
  - growing Health Tech Industry through innovations and products, such as care robots or mobile health applications monitoring health status and it offers
- The Silver Economy offers:
  - new highly skilled tech jobs,
  - reskill low qualified population

# Poslovni forum "Slovenia on Top of Personalized Medicine", Dubaj, EXPO 2020

## Soorganizacija delegacije s SPIRITom



# Prvo inovativno zdravilo za raka prostate



 celica biomedical

Transforming key medical challenges into opportunities

**SmartCure®**  
Small molecules target glial metabolism to revert neurodegeneration and cognitive decline.

**HybriCure®**  
Autologous immunohybridoma cell-based advanced treatment of cancer.



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

 celica biomedical Tehnološki park 24, 1000 Ljubljana, Slovenia EU. Tel.: +386 (0)1 544 36 04 / Fax: +386 (0)1 534 70 36 / office@celicabiomedical.com

# Smart gene - Novo gensko zdravilo za zdravljenje raka



Vodilni partner na projektu je bil Onkološki inštitut Ljubljana, partnerji pa COBIK, Iskra PIO in JAFRAL ter FE UL. Soizvajalca projekta sta bila VF UL in ORL Klinika UKC Ljubljana.

To je bila prva predstavitev dosežka slovenskih znanstvenikov pri EMI v zgodovini.

...mislimo, da je to eden najuspešnejših, javno sofinanciranih projektov, na področju medicine in biotehnologije v Sloveniji.

”Nasvet? Ključno je razumevanje, dobra komunikacija in tudi volja priskočiti eden drugemu na pomoč, ko se kaj zatakne.”

## "Inoviranje v farmacevtski industriji je kolektivni šport"



V Razvojnem centru Slovenija v Leku so prvi in edini razvili kompleksno generično nanotehnološko zdravilo z učinkovino ferumoksitol.

Nujna sestavina za uspeh pa je prava mešanica drznih idej in izkušenosti

**ZLATA EKIPA**

## PRIHODNOST: Center za celično in gensko terapijo - KI

Known Hundreds of types of cancer

**1 in 2000 Slovenians**  
has a rare disease,  
half of them, children.



For most rare diseases and cancers, there are no effective cures yet. Remarkable advances in the field of life sciences promise to cure the cause of many diseases in the years to come. **Advanced treatment approaches such as gene and cell therapies are highly effective because they are targeted, tailored to individual patients or groups of patients**, and can even lead to a lasting cure.

The approach to each patient is central to the development of new therapies. Access to the latest treatment methods is particularly important at this time.

## PRIHODNOST: Cosylabov projekt AART

Motivation: Cancer, the world-leading cause of death

- 2020: 19.3 million new cancers, 9.5 million died
- 2021: 30% fewer treated patients due to COVID-19
- The world-leading cause of death in next 2-3 years
- By 2030, expected 26 million new cancers and the number of deaths approx. 17 million
- Many cancers can be cured if detected early and treated effectively

## Cancer treatment today

- **Radiation Therapy**
  - Accuracy dependent on the human factor
  - Multiple treatments (approx. 20 visits)
  - Fewer (localized) side effects
  - Cost-effective
- **Chemotherapy**
  - Risk of complications and side effects
  - Low quality of life
- **Surgery**
  - Good for solid localized tumors
  - Invasive and mutilating
  - Requires large margins
- **Other (e.g. immunotherapy)**



## Challenges

- Costs of radiation therapy devices are rather high (typically 3-5 million USD)
- Highly-specialized personnel are required (team of approx.. 4-5 per device)
- Workflow is labor extensive
- Need for devices and qualified personnel due to increase in cancer cases
- Low integration and standardization of oncology systems results in slow treatment, lower throughput of patients, physician burnout and working over-time



## Why is Cosylab doing this?

- **Cosylab has a solution to on-going cancer treatment challenges.**
- We want to make cancer therapy **available to entire society**
- Imagine treating cancer with radiation therapy as simple as having a dental X-ray!
- Our **solution consists of an irradiation device and advanced software solutions.**

# Cosylab solution, AART project

AFFORDABLE DEVICE + AUTOMATED, AI SOFTWARE = AART value proposition

Included products to control device:



Supervisor ONE Treatment ONE

Position ONE

AART will enable cancer treatment for an extra 2 million people per year!

Included products for treatment planning

Plan ONE

AI

Adapt ONE

Workflow ONE

## AFFORDABLE DEVICE

- 30% more affordable than existing machine
- Lower cost of support

## EXTREMELY SIMPLE TO USE

- From 4-5 skilled oncologist to 1-2
- System guided approach

## CLOUD BASED, AUTOMATED, AI SUPPORTED WORKFLOW

- from 4h to 5 – 10 minutes for planning

## INCREASE PROFITABILITY FOR HOSPITAL

- Lower CAPEX, lower OPEX, increase number of treatment per day

Hvala za vašo pozornost

[www.sis-egiz.eu](http://www.sis-egiz.eu)

[www.sripzdravje-medicina.si](http://www.sripzdravje-medicina.si)