

EU-UKRAINE OPPORTUNITIES FOR COLLABORATION IN AVIATION RESEARCH

- **HORIZON 2020**
- **CleanSky2**
- **UA representation in decision-making bodies**

Igor Rybalchenko, KhAI
Head of International STI Project Office





HORIZON 2020

The European Union's
programme for Research
and Innovation

Open to the world!



HORIZON 2020

WHAT IS HORIZON 2020?

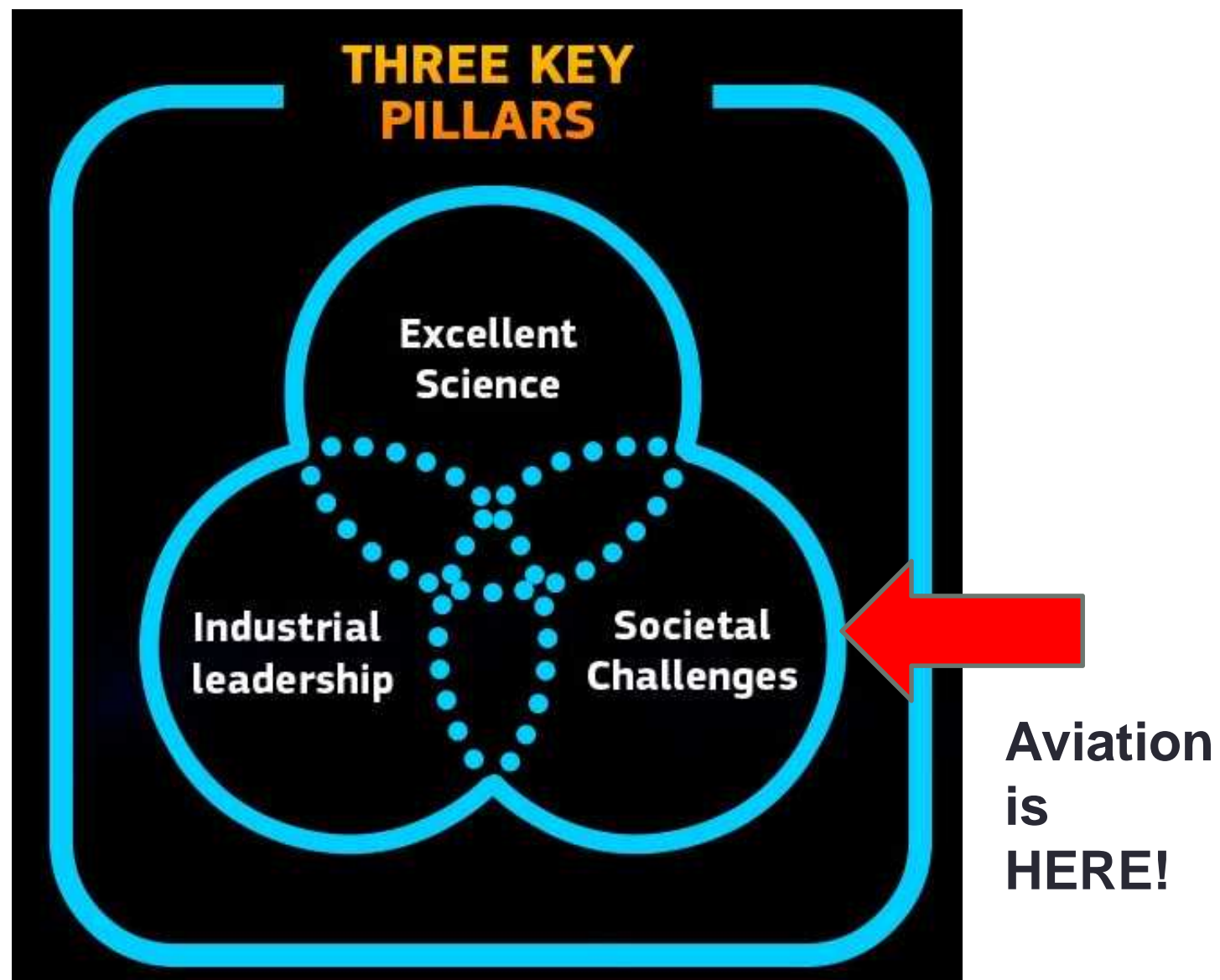
- A €80 billion research and innovation funding program (2014 -2020)
- A response to economic crisis by investing in future jobs and growth
- It addresses people's concerns about their livelihoods, safety and environment



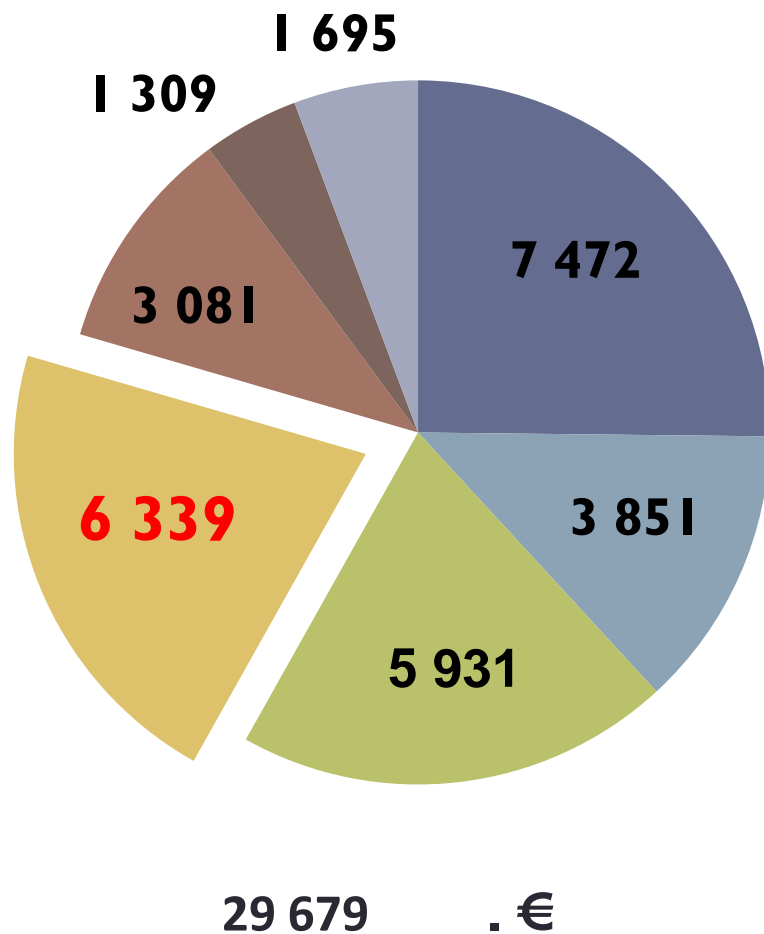
Horizon 2020

A single programme

- Coupling research with innovation: 'from lab to market'
- Focus on societal challenges: health, clean energy, transport, etc.
- Open to participation: companies, universities, institutes in EU and beyond



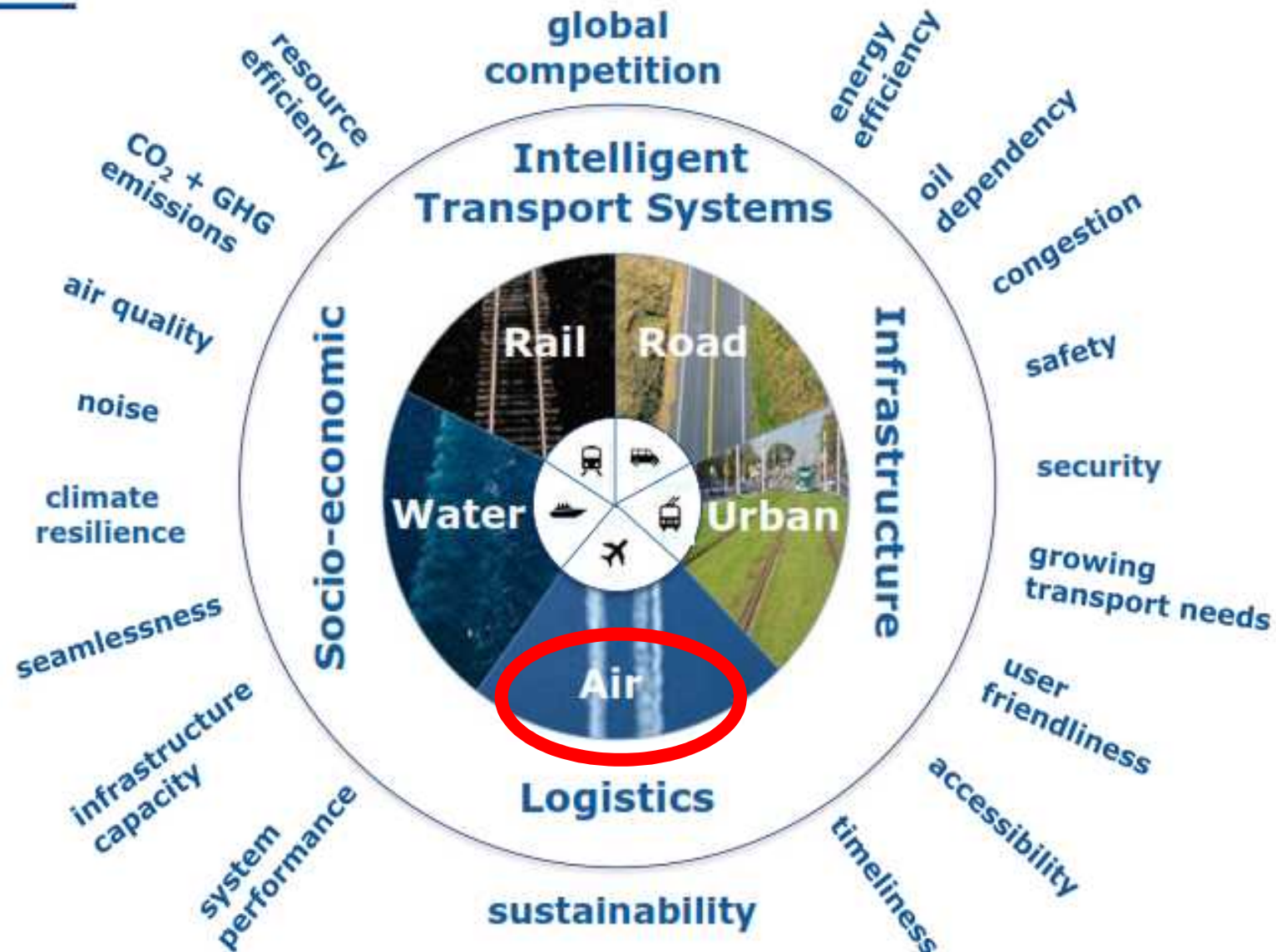
Societal challenges (budget):



- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Secure societies

Transport:

Commission



CALL: MG - MOBILITY FOR GROWTH

To be open: 5 Sep 2018

Aviation-related topics:

- **Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts**
- **Aviation operations impact on climate change (InCo flagship)**
- **Future propulsion and integration: towards a hybrid/electric aircraft (InCo flagship)**
- **Airworthiness of mass-market drones**
- **Innovative technologies for improving aviation safety and certification in icing conditions (InCo flagship)**

Other H2020 opportunities:



- ➔ Excellent Science
- European Research Council
 - ➔ - Future and Emerging Technologies
 - Marie Skłodowska-Curie Actions
 - ➔ - Infrastructures



Industrial Leadership

- Leadership in Enabling and Industrial Technologies (LEIT)
- ➔ I. Information Communication Techno
- ➔ II. Nanotechnologies, Advanced materials, Biotechnology and Advanced manufacturing and processing (incl. FoF)
- ➔ III. Space
- Access to risk finance
- Innovation in SMEs



Societal Challenges

- Health, demographic change and well-being
- Food security, sustainable ...
- ➔ - Secure, clean and efficient energy
- Smart, green and integrated Transport (8.25%)
- ➔ - Climate action, environment, resource efficiency and raw materials
- ➔ - Secure societies



- Spreading excellence and widening participation
- Science with and for society
- Communication & dissemination

EIT
JRC

Total 70,2 bEur

2011 prices

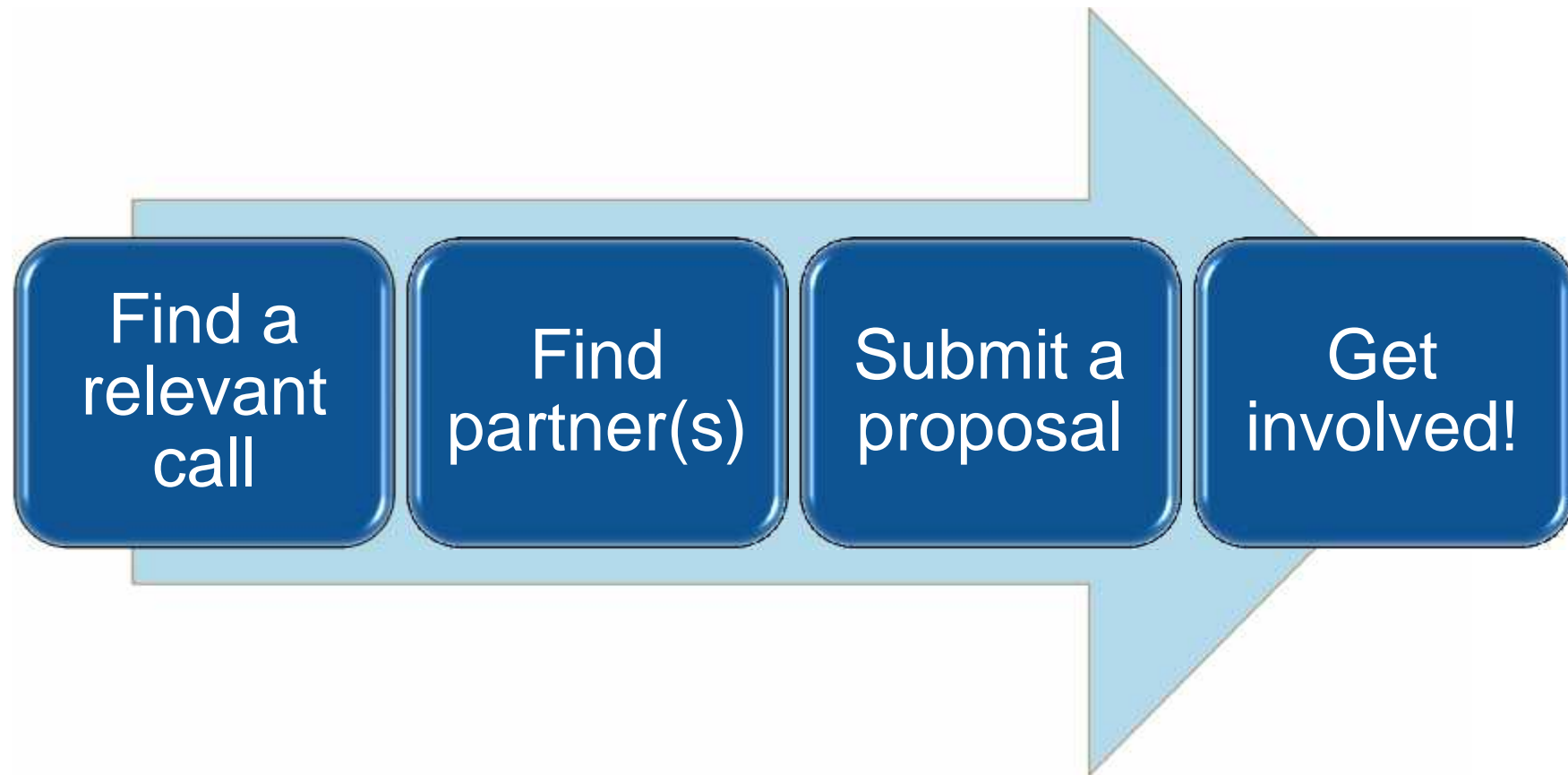


Who can participate in 2020?

- ▶ Science – Universities, Research Institutions, Labs etc.
- ▶ Business – large, medium, small
- ▶ Governmental bodies and NGOs
- ▶ **BUT!**
- ▶ Excellent science
- ▶ Innovative business
- ▶ Of European dimension
- ▶ According to 2020 priorities



How does it work?



Where to find more information and where to apply?

- **Horizon 2020 Participant Portal**

Research and Innovation
European Commission

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

- **Horizon 2020 European Commission**

<http://ec.europa.eu/programmes/horizon2020/>

- **ETNA2020** (Transport NCP's network)

<http://www.transport-ncps.net/>





Clean Sky 2

<http://www.cleansky.eu>

What is leanSky2?

- ❑ **Largest European programme in aviation (€4 billion, 24 countries, 600 partners)**
- ❑ **Joint Technology Initiative (JTI) – EU and leading aviation industry**
- ❑ **Public-Private Partnership (PPP) – EU funding + Industry funding**
- ❑ **Continuation of CleanSky1 (FP7)**
- ❑ **Integral part of 2020**

CS2 Goals

- **New generation of aircrafts – development and demonstration**
- **Emissions cut - CO₂ at 50%, NOx at 80%, noise at 50%**
- **Integration of various innovations at aircraft/system level**
- **EU sustainable development in such high-tech field of industry**
- **Global competition winner**



Founding Members





8th Call for Partners (CfP08):

Area	No. of topics	Funding (M€)
IADP Large Passenger Aircraft	17	19,75
IADP Regional Aircraft	4	4,70
IADP Fast Rotorcraft	7	13,95
ITD Airframe	16	11,50
ITD Engines	11	11,20
ITD Systems	13	9,20
TOTAL	68	70,3

**NOW
OPEN!**

NEW! – Two thematic topics (1.8 Meuro)

Detailed topics description at:

http://ec.europa.eu/research/participants/portal/doc/call/h2020/jti-cs2-2018-cfp08-air-01-37/1812627-cfp08_call_text_-_list_and_full_description_of_topics_r1_en.pdf


Ukraine in CleanSky2

- Ukrainian entities – > eligible since March 2015
- Sept. 2015 (CFP02) – Sept. 2017 (CFP06):
 - 7 proposal submitted (with UA partners)
 - 3 proposals retained in reserve list
 - 1 proposal selected for funding

CS2 Project - Success Story

- AMBEC - Advanced Modelling Methodology for Bearing Chamber in Hot Environment
- Duration: 01/05/2018 – 30/04/2021
- Budget: 1 699 669 Euro
- Topic leader: SAFRAN AIRCRAFT ENGINES
- Ukrainian Consortium:
 - Science and Technology Center of Ukraine
 - IVCHENKO-PROGRESS Design Bureau
 - JSC MOTOR SICH
 - National Aerospace University “KhAI”

Ukrainian involvement in strategic EU aviation research decision bodies

- 
- **H2020** “Smart, green and integrated transport” – Ukrainian national representative(-s) and experts in the Programme Committee
 - **ACARE** - Ukrainian observer or associate membership of the ACARE General Assembly
 - **CleanSky2** - Ukrainian membership of the Clean Sky 2 States Representative Group



H2020 “Transport” Programme Committee Representatives/Experts

- Ministry of Education and Science of Ukraine
- 1st official call 29 Aug 2017 – no results
- 2nd call 20 Nov 2017 – no results
- 3d call 26 Jan 2018 results:
 - ✓ **Prof. Sergey Peresada** (Kyiv Polytechnic University) was selected as an expert
 - ✓ Programme Committee Member not selected again



Advisory Council for Aviation Research and Innovation in Europe

- Top level group of EU aviation experts
- High-level, long-term strategy development (SRIA, FlightPath 2050) => H2020 and CleanSky
- 113 participants
- General Assembly includes Member States Groups
- Several contacts with ACARE secretariat, MSG members, MESU etc.
- **Mr. Victor Shulepov (UkrRIAT)** was nominated by MESU as MSG observer

CleanSky2



- Ukraine is pretty new in CS2 (2015)
- Ukraine has a right to participate in CS2 State Representative Group
- CS2JU legal advisor Bruno Mastantuono was contacted
- Following his advice:
 - **UA Mission in EU was contacted to initiate SRG member nomination**
 - **Letter from UA Aerospace Cluster was sent to UA Prime-Minister on the same issue**
- Waiting for reply...



National Aerospace University "KhAI"
Kharkiv, UKRAINE

Contacts:

Igor Rybalchenko

17 Chkalova str.
61070 Kharkiv, Ukraine

iar@khai.edu
<http://ncp.khai.edu/>