Łukasiewicz
Instytut
Spawalnictwa

Łukasiewicz
Instytut Napędów
i Maszyn
Elektrycznych
KOMEL

Łukasiewicz
Instytut
Metalurgii
Żelaza

Łukasiewicz
Górnośląski
Instytut
Technologiczny

Jarosław Marcisz, Wojciech Szulc – Łukasiewicz – GIT

ESTEP & CLEAN STEEL PARTNERSHIP INFORMATION DAYS

6-7 June 2023; Kraków Poland

ŁUKASIEWICZ - GIT in a nutshell

As of 2019, we are part of the Lukasiewicz Research Network

It is the third largest research network in Europe and the R&D leader in Central and Eastern Europe. It consists of 32 institutes

Since January 1, 2023, we have been functioning as the Lukasiewicz-Upper Silesian Institute of Technology (GIT) after incorporating the Institute of Welding and the Institute of Electric Drives and Machines

We are a modern research institution

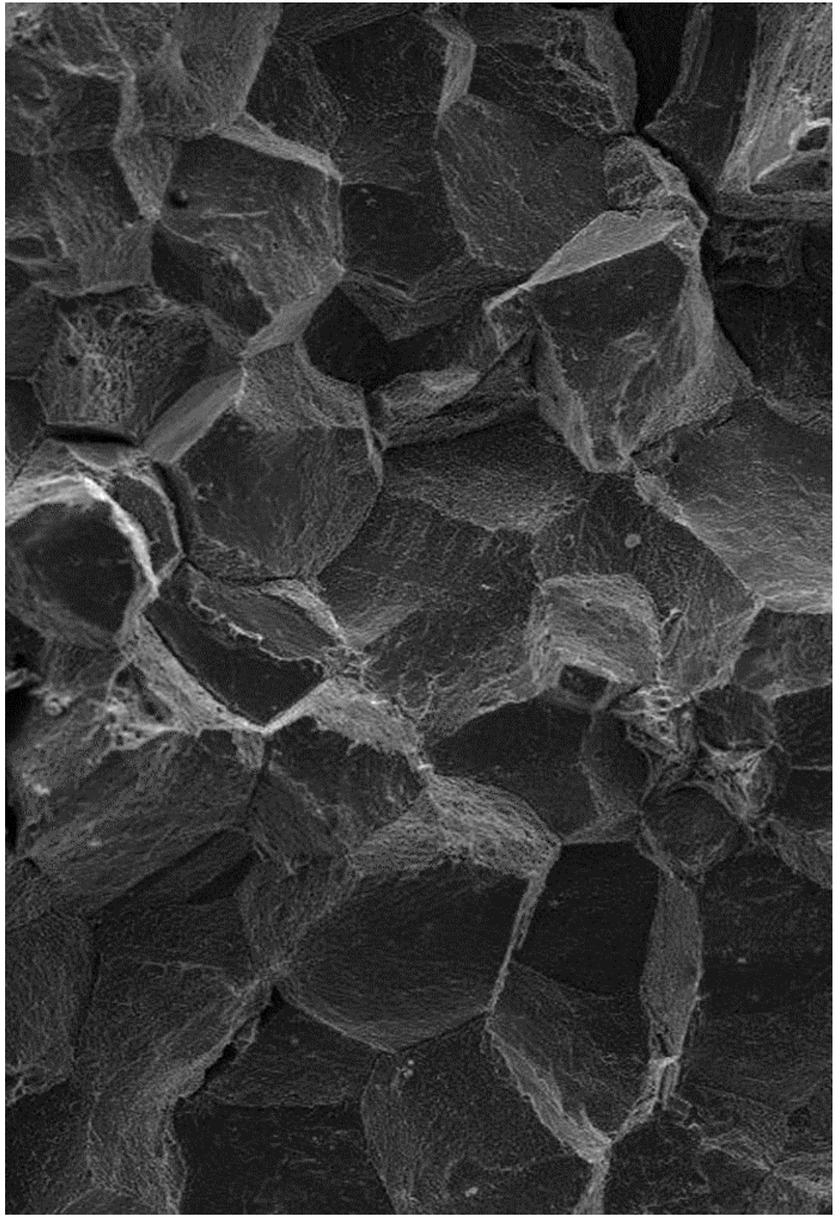
We manage 12 Research Groups within 4 Centres

We have specialised research equipment

Over 100 pieces of key apparatus, including 7 unique in Poland

The best people work for us

Łukasiewicz - GIT has 325 employees, 190 of whom are research and engineering staff



Łukasiewicz
GIT

Centre of Material Research

Centre of Electrical Machines and Drives

Centre of Welding

Centre of Metallurgical Technologies

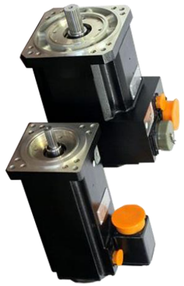
ECONOMIC SECTORS

STEEL SECTOR

ENERGY
(CONVENTIONAL, NUCLEAR, RENEWABLE ENERGY SOURCES)

TRANSPORT, AUTOMOTIVE AND ELECTROMOBILITY

AVIATION AND SPACE INDUSTRY



DEFENCE

TRAINING

46 PROJECTS IN PROGRESS PLN 51.6 million

RESEARCH AND DEVELOPMENT PLN 30.1 milion

- Interoperable railway rails with standard and enhanced performance properties for the construction of high-speed and conventional railway lines
- Development of technology for extrusion of sections from ultra-high-strength AlMgSi(Cu) alloys
- Development of materials and high-energy technologies for the production of layers and coatings with improved wear resistance under frictional conditions
- Development of low-slope modular hydropower plant technology with high energy efficiency and minimal environmental impact

COMMERCIALISATION PLN 21.5 milion

- Sintering pot tests and iron ores characteristics
- Numerical and physical analysis of the manufacturing process of semi-finished products for missile bodies
- Development of the cannon stabilisation engine of the LEOPARD II PL tank

SALES OF PRODUCTS AND SERVICES PLN 19.3 milion

- Certified reference materials
- Training and certification activities (welding personnel)
- Metal alloys and special equipment, including for the defence industry

Why we are an ESTEP member

IMZ / GIT in ESTEP

- The Institute has begun cooperation with ESTEP in 2006.

- The Institute's authorities recognized that after Poland's accession to the European Union, opportunities should be explored **to build the Institute's brand in the European Research Area**, which should make it easier to apply for European funds for research and development. One important element of this approach was active participation in the ESTEP European Steel Technology Platform.

- Institute employees have been active in several Working Groups (now Focus Groups):
  - People,
  - Profit through Innovation - safe, clean, cost-effective and low capital intensive technology,
  - Efficient use of raw materials,
  - Energy.

IMZ / GIT in ESTEP

- This approach has proven effective, and the Institute is currently implementing more than a dozen European projects (**worth more than PLN 11 milion**) funded by various EU sources, such as RFCS and Horizon Europe - through the Clean Steel Partnership and RFCS Big Ticket, for example:
  - **MaxH2DR** - Maximise H2 Enrichment in Direct Reduction Shaft Furnaces **(started in 2022)**
  - **TransZeroWaste** - Upgrading of low - quality iron ores and mill scale with low carbon **(started in 2023)**
  - **SMARTWELD** - Development of a SMART system integrating automatic/robotic hybrid WELDing technologies, digital-twinassisted quality monitoring, and WPS predictive tool **(started in 2023)**
  - **MODIPLANT** - MODular hybrId technology in the Steel PLANT production **(started in 2023)**
  - **EDIH - SILESIA SMART SYSTEMS** capacity building and deployment in the EDIH network to enhance digital transformation in the Silesia and Opolskie Voivodships in Poland **(started in 2023)**
  - **M-ERA.NET** - Thermal Barrier Coatings for greener heat-to-power applications: understanding limits of operation under hydrogen combustion and sustainable outlook **(started in 2023)**
  - **FastLoRoll** - Fast simulation tool for long product rolling
  - **BioFire** - Advanced Coated Steels for new demanding Biomass Firing environment having a high recycling behaviour and an improved service life
  - **PROTEUS** - Long product quality optimisation through enhancement and utilisation of residual stress minimising process strategies
  - **ESSA** - Blueprint "New Skills Agenda Steel: Industry-driven sustainable European Steel Skills Agenda and Strategy”

IMZ / GIT in ESTEP

Now we are aware that IMZ (GIT) is widely recognized in the European steel community. We have become a valuable and responsible partner, willingly invited to consortia applying for projects funding from various European funds.

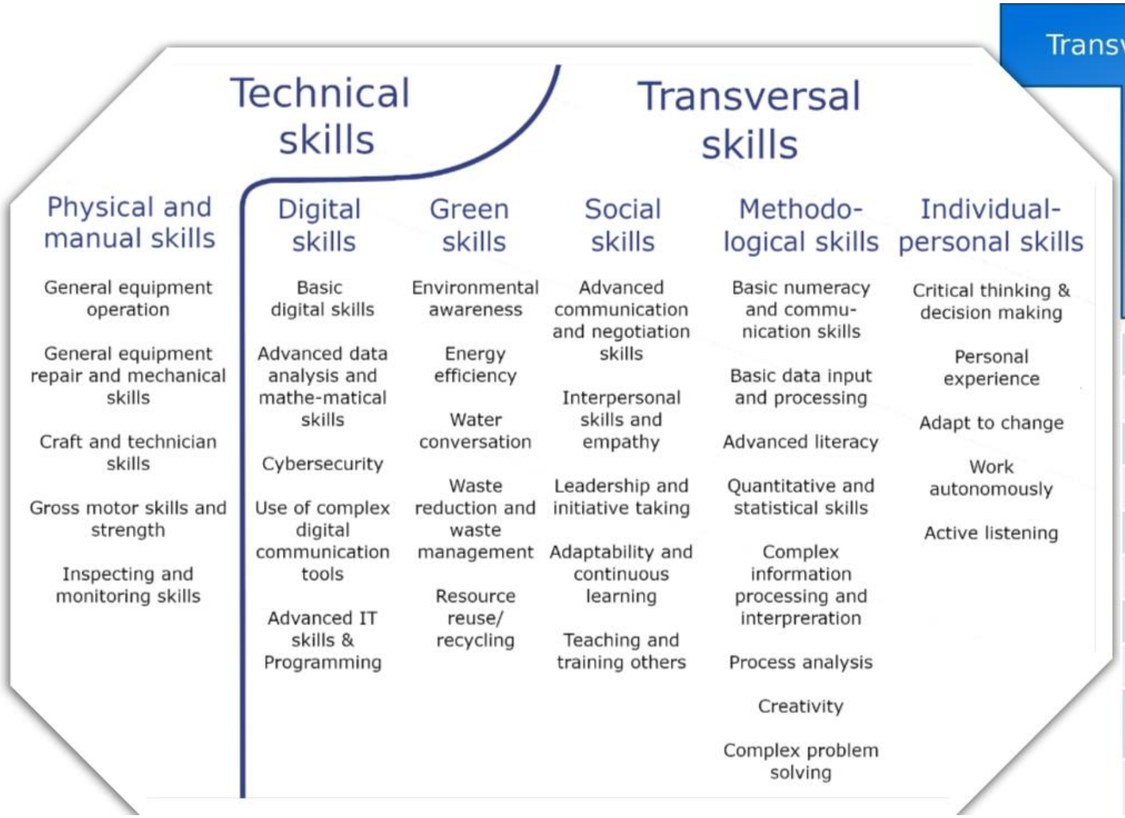
ESSA - Blueprint "New Skills Agenda Steel: Industry-driven sustainable European Steel Skills Agenda and Strategy”

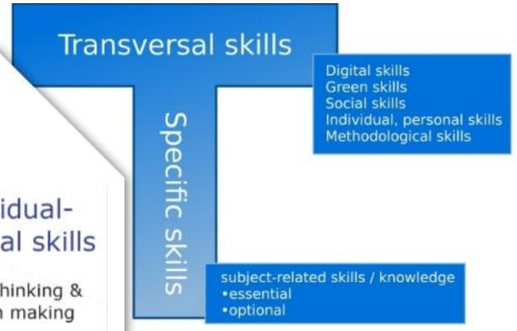
ESSA - Blueprint

- **Mission**
  - Steel industry driven proactive adjustment of the future skills demands developed by the industry and for the industry.
- **Main objectives**
  - Proactive skills adjustments
  - New training and curricula requirements
  - Political support measures
  - Successful sectoral upskilling schemes
  - Efficient management of knowledge
  - Improve recruitment and retention
  - Key Performance Indicators (KPIs)
- **24 partners + 20 associated partners**

ESSA - Blueprint

- **T-shape Skills and Selected Job Profiles identified:**

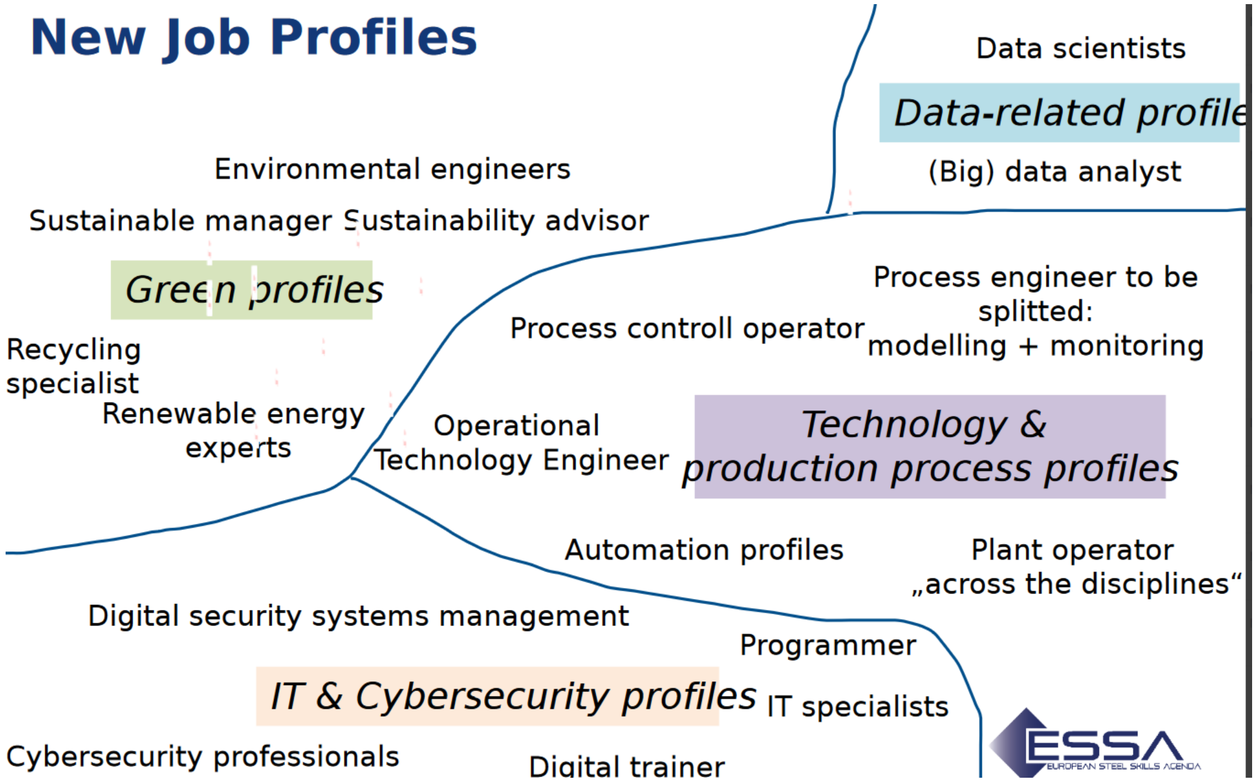




Metallurgical manager
Process engineer
Maintenance and repair engineer
Process engineering supervisor
Production supervisor
Industrial electrician
Metal processing plant operator
Factory Hand
Metal working machine tool setters and operators
Training and Staff Development Professionals (Corporate Trainer)

ESSA - Blueprint

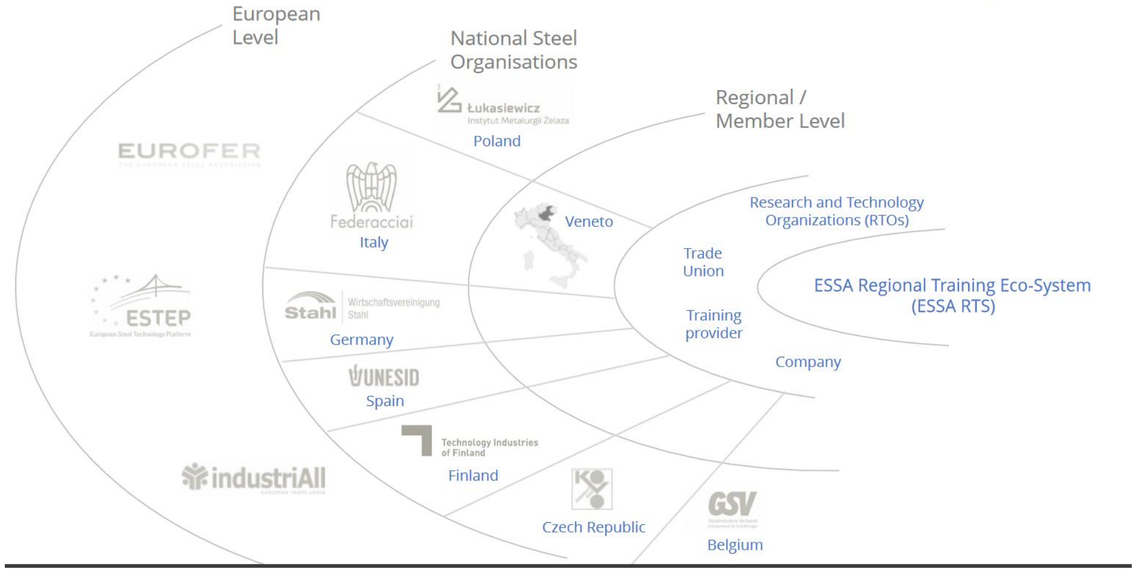
- **New Job Profiles identified:**



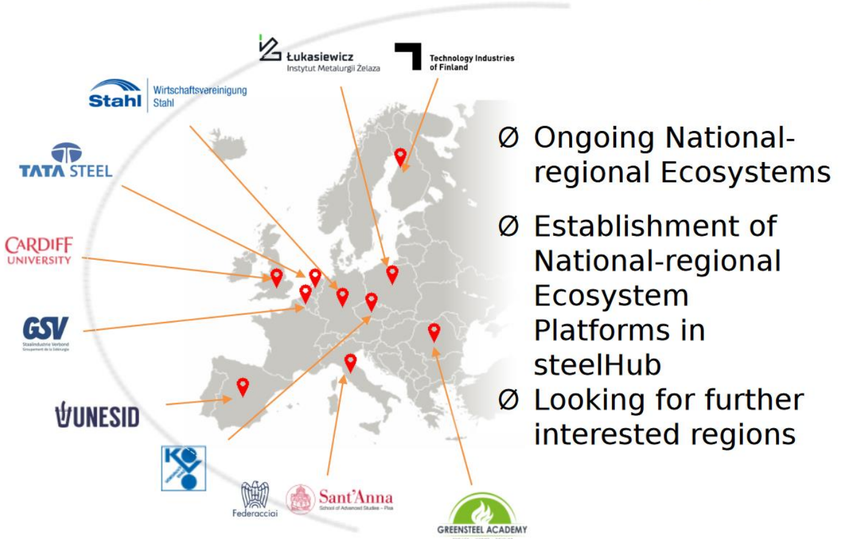
ESSA - Blueprint

- **ESSA European Community of Practice (ECoP Steel) – Regional Training Ecosystems**

Implementation and Rollout Structure



European Community of Practice (ECoP Steel)



- Ø Ongoing National-regional Ecosystems
- Ø Establishment of National-regional Ecosystem Platforms in steelHub
- Ø Looking for further interested regions

- **ESSA Online Training Ecosystem - steelHub**

Thank you for your attention

Łukasiewicz
GIT