TRAIL
TRUSTED AI LABS
BY DIGITALWALLONIA / SPW-RECHERCHE

NL AI Coalitie

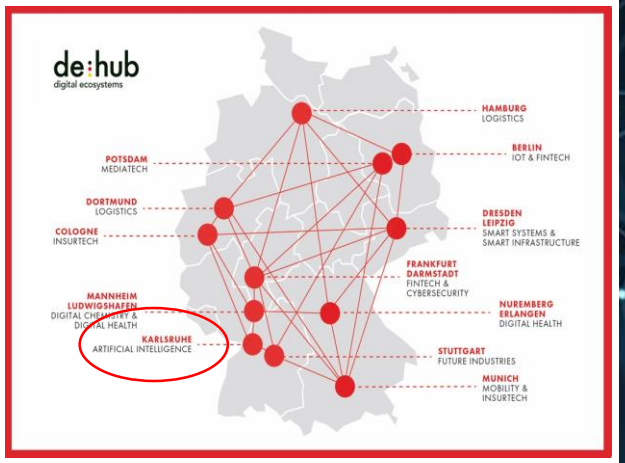
AI FLANDERS
BUILDING OUR DIGITAL FUTURE

600 AI researchers

digital wallonia 4.ai

Mila

HUB FRANCE IA



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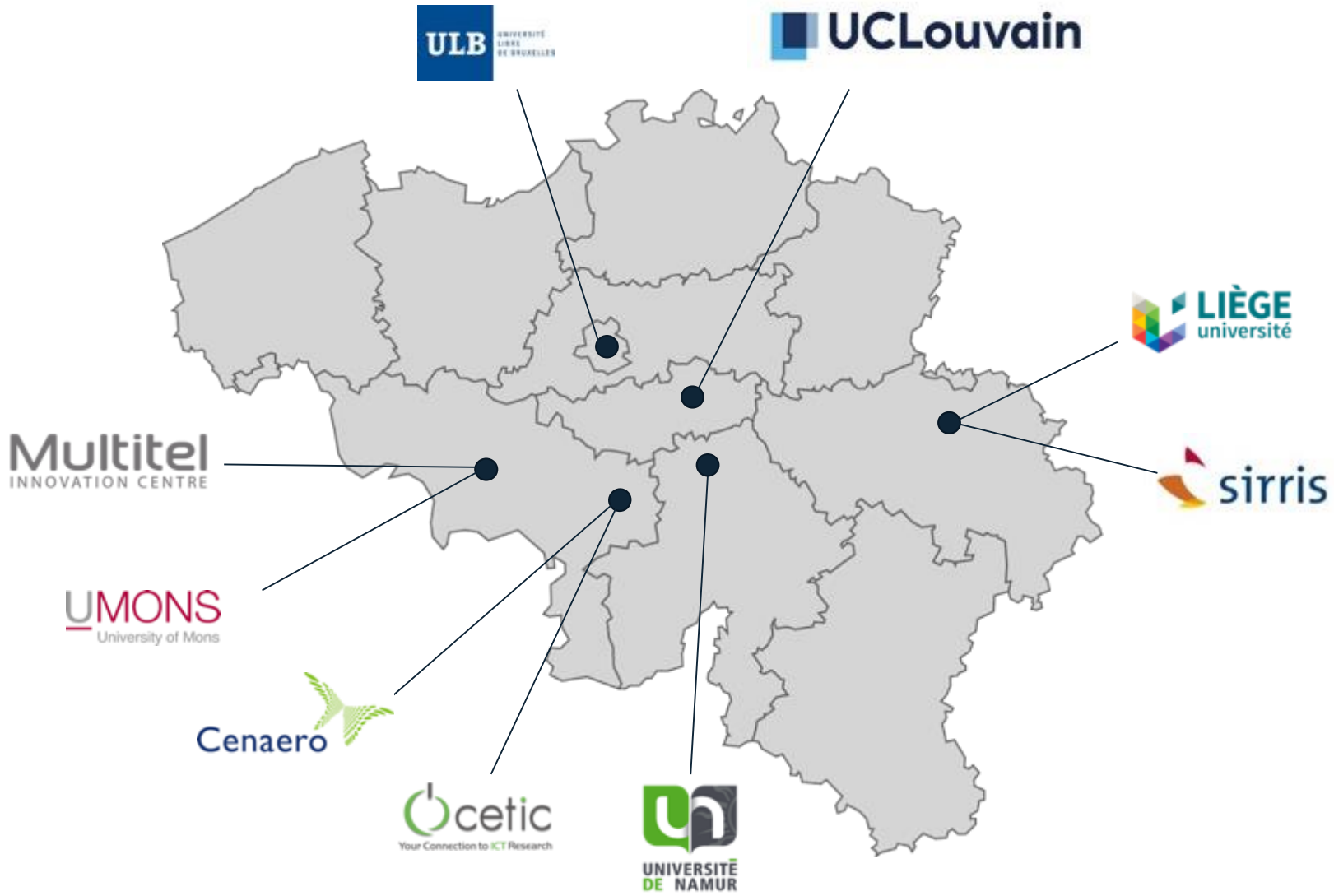
ULB
UCLouvain
LIÈGE université
Multitel
INNOVATION CENTRE
sirris
UMONS
University of Mons
Cenaero
cetic
Your Connection to ICT Research
UNIVERSITÉ DE NAMUR

Trusted AI Labs, Virtual Institute

Trail Institute : Excellence in research and training

Trail Grand Challenges

with applications to 4M+E

Trail Factory : Mezzanine structure (tech transf)

Trail4Ventures : start-ups

TRAIL 1st step = direct funding of 60 PhDs (32 Meuros)

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TRAIL TRUSTED AI LABS BY DIGITALWALLONIA / SPW-RECHERCHE

First step Integrated program 2021-2026 by DigitalWallonia4AI and SPW/EER
60 young talented researchers

Human-AI (Consensus)

Trusted AI (crypto: blockchained AI)

AI-models hybridation

Embedded AI

(min 15% of PhD time
+ research centers)

***7** Grand Challenges*
(emerging technos applied to an application domain

Zero burn-out workflows

Towards certifed AI (Trustworthy AI for critical systems)

Coalitional learning / Medecine

4 domaines d'excellence

Human-AI

Trusted AI

AI-models hybridation

Embedded AI

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7 Grands Défis (avec les entreprises)

Hybridizing models & data (e.g. additive manufacturing, and cancer treatment optimization)

Physics, data, transfer learning (e.g. buildings consumption)

Coalitional active Learning (e.g. inter-hospital AI)

7 Grands Défis

Weakly-supervised ML (decrease expert inputs)

Trustworthy AI for critical systems

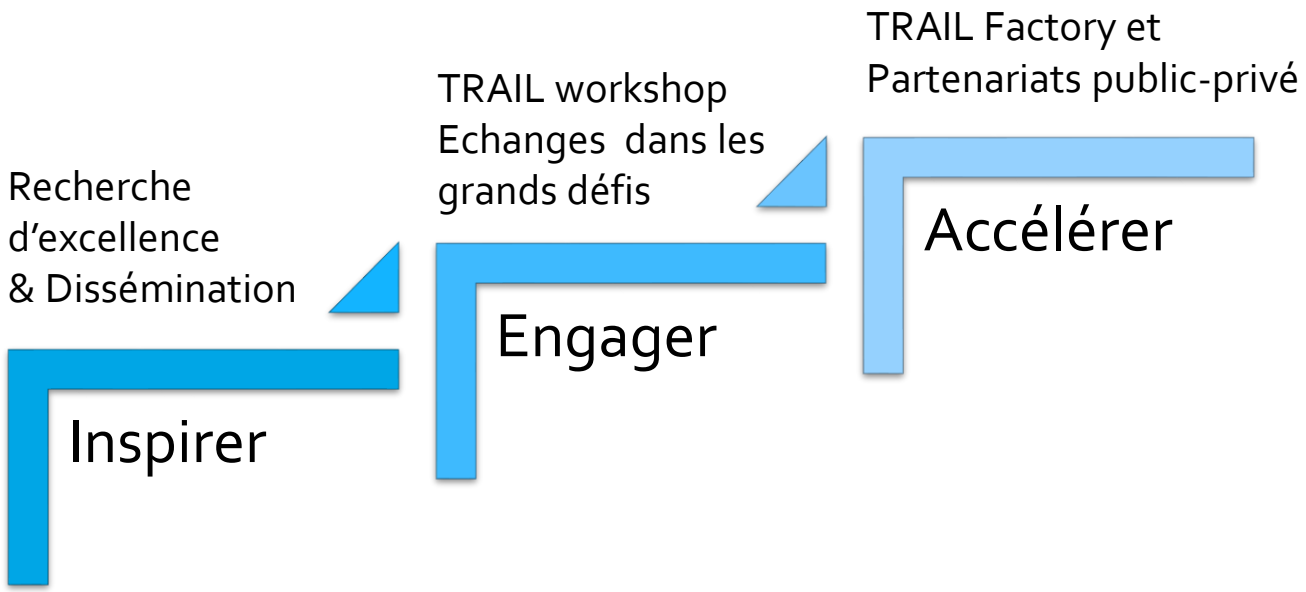
Zero burn-out, zero-accident workflows

First-time right manufacturing

3 niveaux d'interactions avec les entreprises

<u>Pour les entreprises de la Wallonie:</u>

1) **Entreprises utilisatrices de l'IA (IBA, AGC, GSK, CMI …)**
2) **Entreprises prestataires (réseau IA)**



Universités et recherche ⟷ Centres de Recherche Agréés

EU Regulatory framework is an opportunity for TRAIL

TRAIL:

- Inter-hospital consensus for treatments
- Cryptography for trusted AI
- Trusted AI for critical systems
- AI assisting Humans in workflows
- From Montreal Declaration to Belgium Pledge

https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai

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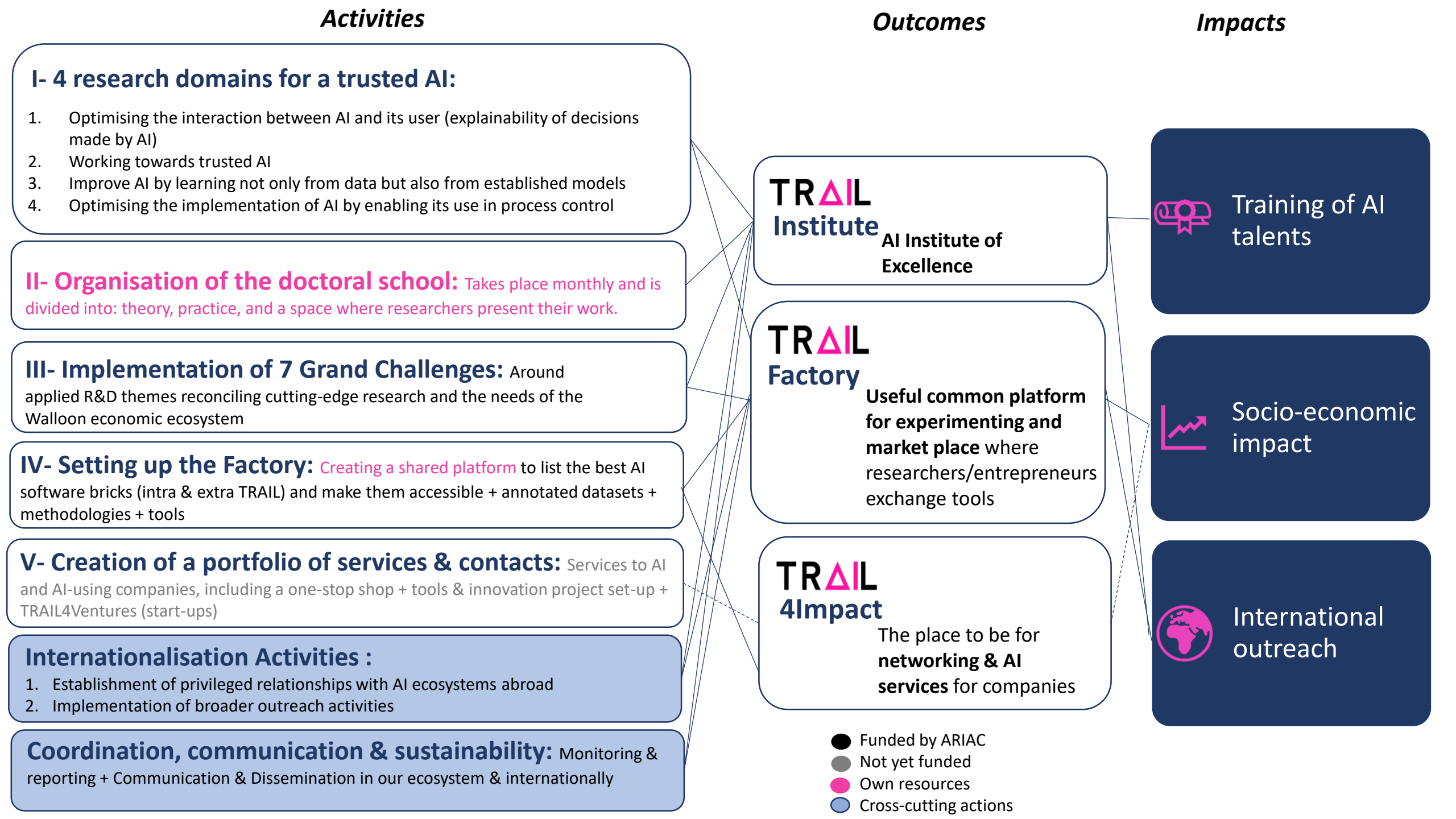
Activities
Outcomes
Impacts
I- 4 research domains for a trusted AI:
1. Optimising the interaction between AI and its user (explainability of decisions made by AI)
2. Working towards trusted AI
3. Improve AI by learning not only from data but also from established models
4. Optimising the implementation of AI by enabling its use in process control
II- Organisation of the doctoral school: Takes place monthly and is divided into: theory, practice, and a space where researchers present their work.
III- Implementation of 7 Grand Challenges: Around applied R&D themes reconciling cutting-edge research and the needs of the Walloon economic ecosystem
IV- Setting up the Factory: Creating a shared platform to list the best AI software bricks (intra & extra TRAIL) and make them accessible + annotated datasets + methodologies + tools
V- Creation of a portfolio of services & contacts: Services to AI and AI-using companies, including a one-stop shop + tools & innovation project set-up + TRAIL4Ventures (start-ups)
Internationalisation Activities :
1. Establishment of privileged relationships with AI ecosystems abroad
2. Implementation of broader outreach activities
Coordination, communication & sustainability: Monitoring & reporting + Communication & Dissemination in our ecosystem & internationally
TRAIL Institute
AI Institute of Excellence
TRAIL Factory
Useful common platform for experimenting and market place where researchers/entrepreneurs exchange tools
TRAIL 4Impact
The place to be for networking & AI services for companies
Training of AI talents
Socio-economic impact
International outreach
Funded by ARIAC
Not yet funded
Own resources
Cross-cutting actions

TRAIL is active in its ecosystem

- TRAIL-Institute & TRAIL- Factory : AI Institute of Wallonia (supported by ARIAC / SPW EER). Researchers paid by ARIAC are de-facto members of TRAIL, many other researchers can apply to be TRAIL members
- TRAIL4Ventures relies on powerful incubation tools (WSL, CEI, TTO, ..)
- TRAIL is a piece of a global strategy named « Digital Wallonia »
- The Grand Challenges are aligned with the Strategic Innovation Innitiatives (IIS)
- Key Succes Factors:
  - training of you exeperts transfered to the industry,
  - TRAIL-factory bricks, new innovation initiatives,
  - European new connections