



Towards a vibrant European network of AI excellence centres

ICT-48-2020 – RIA

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/ict-48-2020>

Call Outline

- **Two actions:** RIA and CSA. RIA targeted here
- **Submission date:** 13 November 2019
- **Main Challenges and Goals:**
 - To ensure European strategic autonomy in AI
 - Up to 4 CoE funded, ~12M EUR each
 - CoE = a network of competences and resources becoming a shared facility for user applications and a high-visibility virtual laboratory
 - Each network should be driven by leading figures in AI from major excellent research centers
 - Strong industrial participation and relevance
 - Strong focus on education and competence building
 - Focus on development of AI technologies, but with solid, multidisciplinary, application-driven objectives
 - Great interest in trustable, explainable AI (validation, bias reduction) and privacy-preserving methods

Main Motivations for CERN

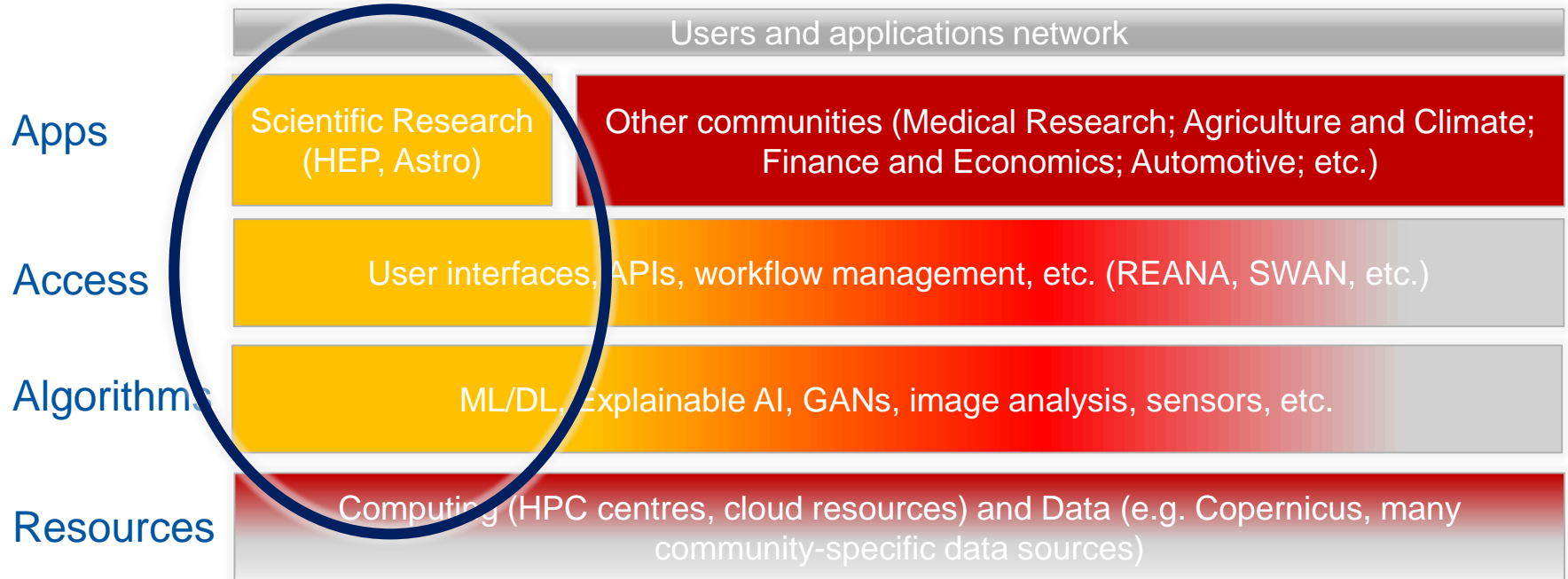
- Organize, structure and fund the ongoing research in AI, currently happening (often at best effort) in many different places (IT, EP, Exp., EN, BE, etc.)
- Ensure the development of a sustainable network of skills and resources to support the evolving HEP experiments computing models
- Put scientific research case at the core of the proposal at the same level as mainstream industrial or societal use cases

Possible Structure (1)

External

Internal CERN/HEP

Internal non-CERN/HEP



Possible Structure (2)

Suggestions
for possible
members?



Hub and spokes
structure

The spokes should
be regional mini-
hubs and provide
clusters of
resources+research
+applications and
access to local
competence and
users networks

Education

- The call has a strong focus on education and competence building
- Capitalize on existing CERN programmes (CERN openlab, CSC, DOCT programmes, etc.)
- Priority on joint academia/industry programmes (ITN-style)
- Possibility of setting up visiting scientists/experts programmes in collaboration with leading universities

Ongoing Discussions at CERN

- IT: CERN openlab, the Data Analytics team in DB, REANA, resource monitoring, etc.
- HEP Experiments (LHC and non-LHC)
 - Interest in developing and validating efficient methods for different workloads (DAQ, Reco, data reduction, analysis, simulation, ML/DL applies everywhere) and building expertise in new platforms
- SFT
 - Interest in further developing ML/DL competences and tools (Root, SWAN)
- BE, EN
 - tools and algorithms for data reduction, anomaly detection, edge /IoT applications, robotics
- KT
 - Currently developing a concept for a CoE in AI at CERN. However, the meaning they give to this is a place at CERN where external companies can get consultancy. It could become (one of) the interface to the network of industrial applications
 - KT/MA has contacts with the medical community (apps, expertise, data)

Ongoing Discussions outside CERN

- A few HPC centres: FZJ, CINECA, BSC, CSCS
- Cloud providers (T-Systems, Google, Amazon, Microsoft, etc.)
- Technology providers (Intel, Nvidia, Google, etc.)
- Universities: many contacts in Italy, France, Germany, Ireland, SEE, still to be structured in a logical cross-complementary form
- Non-HEP applications: contacts with communities in medical research, automotive, food & agriculture, finance, but someone else should lead this part
 - This must have a strong industrial relevance