Remote Research in Engineering

Project duration in months : 24 months

Starting date : 01.01.2022

Project leader : Prof. Fariba Moghaddam

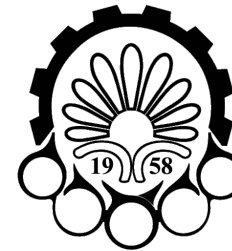Lead Institution : HES-SO Valais

Swiss and MENA Partners :

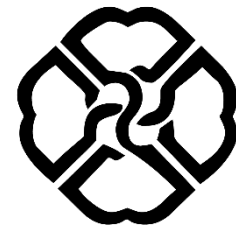1)   HES-SO Valais , Sion – Switzerland

2) Amirkabir University of Technology, Tehran – Iran

Amirkabir University of Technology
(Tehran Polytechnic)

3) University of Kurdistan, Sanandaj - Iran

University of Kurdistan

Objectives :

1) **Establishing a Swiss-MENA institutional cooperation** for an enhanced joint research activities as well as technology transfer involving exchange students

2) **Developing and implementing innovative and collaborative methodologies through an open, sustainable remote experimental activities and research platform** within digital technologies and e-learning environments

3) **Reducing costs of laboratories and research equipment in higher education** by sharing the available infrastructures, resources and equipment for use in engineering field
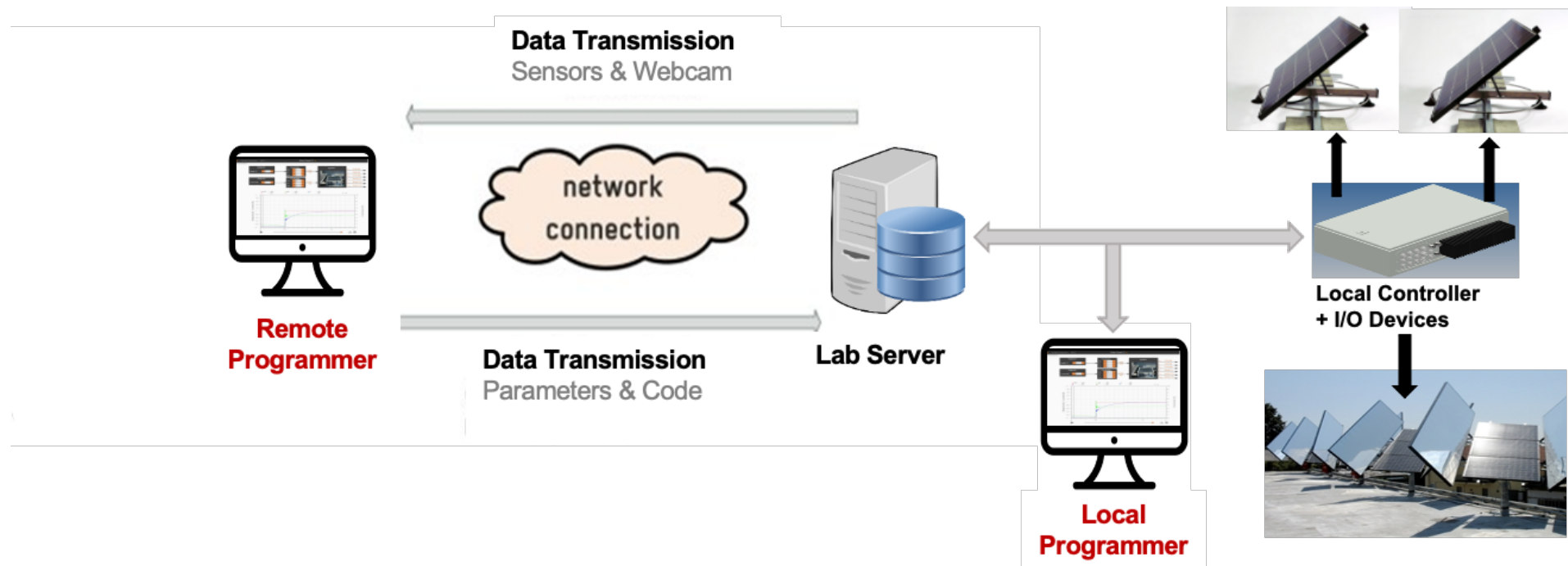
Main activities / Work Packages :

1) Creation of a flexible research management strategy, respecting research partnership
2) Focus group discussion through online meetings with all the partners
3) Identification of the specifications and needs of the research platform to be developed
4) Study and choice of the tools and software to be used
5) Software development (Programming languages : Python, Java, C++, ...)
6) Research stay of the Iranian master students in Switzerland and their training
7) Performance tests of the developed platform by Swiss and Iranian students and researchers
8) Online Master thesis presentation in form of small online Workshops
9) Organisation of a skill building Workshop in Switzerland
10) Other online webinars and workshops for Swiss or MENA researchers interested in developed tools
11) Scientific publication in an international conference/journal

Expected Outcomes (1) :

1) **Real time tools integrated in a platform to do remote advanced research** and implementing services such as advanced algorithms implementation, advanced control techniques, data processing and saving, system monitoring and visualization, numerical simulation,…

Expected Outcomes (2) :

2) **A skill building Workshop organized in Switzerland** for researchers, professors and students of project partners

3) **Two joint Master students** to enforce the collaboration between Swiss and Iranian partners

4) **Online webinars and workshops** for all Swiss, Iranian or MENA researchers interested in developed tools

5) At least **one scientific publication** in an international conference/journal

Risk Management :

1) **Pandemic Risk**
   - ➤ Respect health guidelines
   - ➤ Make a flexible research plan
   - ➤ Allow overlaps between the tasks and compensate for the delays in the future tasks

2) **Schengen Visa issue for Iranian partners**
   - ➤ Submission of applications and invitation letters between 3 to 6 months before the planned visit

3) **Slow Internet Connection in Iran**
   - ➤ Use university connection or wired network at home