The TransContinuum-Initiative (TCI) in a nutshell

Introduction and update

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Transcontinuum Initiative (TCI)

A continuous dynamic workflow
Between
Smart Sensors and IOT devices
and
HPC / cloud centers
passing through
Edge platforms & subsystems
as well as
Smart Networks and Services
executing
Simulation & Modelling, Big Data Analytics and ML*
based on
Math. Methods & Algorithms incl. MSODE**
pervasively augmented by
Artificial Intelligence
protected and secured by
Cybersecurity
back to
Cyber-Physical Systems,
all based on
Data and compute platforms (hw and sw)

* ML: Machine Learning
** MSODE: Modelling, Simulation and Optimization in Data-rich Environment

Original courtesy HiPEAC
The basic concept: TCI scope and objectives

- Identify priorities and recommendations for European R&I workprogrammes
- Engage with European R&I funding agencies and R&D programmes
- Generate and foster an interdisciplinary network of experts in science and industry
- Contribute to SR(I)As and other partner’s documents
- Contribute to the 5 Horizon Europe Missions

see also “TransContinuum Initiative (TCI): our vision”
First steps: Digital Twin use case analysis

- “Real Time Digital Twins” (D. Hartmann, Siemens)
- “Extremes Predictions” (P. Bauer, ECMWF)
- “Urban Air Pollution” (Z. Horvath, EU-MATHS IN)
- “Scientific Mega-Factories” (D. Gratadour, SKA & CERN)

“What are the implementation challenges in the next 3-5 years – throughout the entire digital continuum”

TCI White papers pls see: https://zenodo.org/communities/etp4hpc?page=1&size=20
TransContinuum-Initiative- Network of Experts (TCI-NE):
implementation direction: consultancy

One of the associations is formal contractual partner to “customer”
• Has outbound contract with “customer”
• Has contracts with other associations or ind. partners (inbound)

Inbound contracts
• on associations/ind. partner – level, not individual experts
• associations organize “best fit” to experts and org. payments

Two – level commitment (Quality of deliverables)
• Associations provide best level of expertise
• Joint final review and delivery – approvement (“Quality stamp”)

“customer”, e.g.

ETP4HPC-office

ETP4HPC
BDVA/DARIO
AIOTI
AIOTI
TBD: EPOSS

Univ. Ghent for HiPEAC
EU-MATHS-IN
6G-IA
ECSO
Thank you!
Next step:
TransContinuum-Initiative - Network of Experts (TCI-NE):
Consultancy service

- TCI partners to engage in consultancy project (e.g. 5 missions, Destination Earth, etc.)

- Project scope: “Generate a SRA like document tailored to the needs of target projects or initiatives”
  - In-depth interactive analysis of starting condition & implementation plans
  - Identify R&I priorities for EU workprogrammes (e.g. Horizon Europe, Digital Europe, partnerships, JUs)

- Set-up proposal available (see next page)