

Asian Sites Collaboration

- A strong one to cope with Data Challenges foreseen in LHC, post-LHC and emerging Big sciences (e.g. DUNE, SKA, LSST, etc.)
 - Operational costs reduction is the key: technological advances, resource consolidation, or collective operations
- A Distributed Storage project across Asian sites as an example
 - A test-bed was established together at KISTI-ICEPP-SUT (2018-2020)
 - *A handful tool to exploit and evaluate the advanced networking in Asia*
- Propose a session to discuss any ideas or ways to support collective activities or each individual site in Asia
 - Developing support models towards a strong collaboration in the region to cope with challenges

Discussion

- Reviving the distributed storage setup and having further steps
 - TCP tunings, path optimization, complete distribution of EOS components (again)
 - Looking for a proper use case (ALICE, ATLAS, CMS, Belle II, etc. or non-LHC domains)
 - ▶ Requires to be interfaced with Data Management frameworks as well as Workload Management frameworks
 - Expanding partners
- Searching for new approaches towards joining efforts for training, sharing expertise and technologies, development to reduce operational costs

- A firm foundation may be needed for sustainable support of such activities by encouraging the involvement of experts rather than the solicitation of helps

Challenges

- (Operators/Admins) Lack of knowledges, expertises, training opportunities on certain technologies
 - Difficulties to follow-up technology changes, adapt implementations, develop own solutions (for some cases)
- (Sites) Difficulties on securing resources, manpower, budget, and infrastructure (space, electricity, facility, networking, etc.)
 - Susceptible to organizational, institutional, nationwide policy changes

Proposed Actions

- Tracking Technologies / Training Opportunities
 - Supporting the participation to various tutorials/workshops
 - Inviting experts outside (e.g. Security Workshop @ ISGC, "1st Asian HTCondor Workshop" @ ATCF5, "EOS Session" @ ATCF6)
 - Organizing WGs for technology tracking, training, commissioning, developing, etc.
 - ▶ Taking jointly part in existing WGs in HEPiX, HEP Foundations, other WLCG-related projects
- Sites support
 - Asi@Connect programs, inter-country exchange/support programs (ex. ID-RoK(NRF))
 - Individual donation hardwares (in-kind)


Baseline

- Individual efforts are limited and unsustainable

() ASGC runs ROC_Asia/Pacific*

- Envisaging an Asian version of computing cooperation to support S&T communities, such as European projects (*EGI, EOSC, ESCAPE, ...) and US projects (OSG, XSEDE, OSN, ...)
- Proposing "Asian Big science Clouds (ABC)"
 - ▶ A virtual collaboration of computing sites (centers) in Asia for sciences (no matter how big or small)
 - ▶ Discussing and seeking practical methods to support the related (or required) activities
 - Including actions in the previous slide
 - Starting with a joint-session (or workshop) in computing-related conferences or workshops, e.g. ISGC, APAN, WLCG Workshop, CHEP, etc.

Sustainable Model?

- With the outcome from ABC, we could try to establishing a practical S&T cooperation program (for funding) through ASEAN, ASEAN+3, EAS, etc.
 - ASEAN (Association of Southeast Asian Nations)
 - ▶ Member States: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
 - ▶ ASEAN Dialogue Partner: Australia, China, India, Japan, Republic of Korea, New Zealand, Pakistan (Sectoral), EU, UK, US, etc.
 - ASEAN+3 (ASEAN Plus Three) : ASEAN, China, Japan, Republic of Korea
 - ▶ ASEAN PLUS THREE COOPERATION WORK PLAN (2023-2027) 
 - EAS (East Asia Summit) : ASEAN+3, Australia, New Zealand, India

ASEAN PLUS THREE COOPERATION WORK PLAN 2023-2027

2.8 Strengthen cooperation in science, technology, and innovation (STI) through:

- (a) Exploring cooperation in human resource development as well as development of technical and vocational skills and networking on STI, and promotion of public-private partnership;
- (b) Fostering an open, equitable and environment for the development of STI, including by effectively protecting Intellectual Property Rights (IPR);
- (c) Exploring joint capacity building activities, exchange of information, and sharing of best practices in areas of mutual interest such as STI policies, technology transfer, commercialisation, products and scientific standards, technical regulations, productivity, investment and intellectual property rights (IPR) management;
- (d) Promotion of research and technology development in areas with potential for commercial applications such as robotics and automation, next-generation automobile, technology, and novel food, biotechnology, food technology, new materials, microelectronics and information technology, marine resources, new and renewable energy, climate change, life science, medical devices and technology, and space technology;
- (e) Cooperation in meteorology addressing climate information and prediction services, weather observations and climate change; and
- (f) Promotion and/or participation in relevant STI events, for example, the APT Centre for the Gifted in Science (ACGS), the APT Young Scientists Collaborative Innovation Forum and innovation youth camps and awards.