

Asia Tier Center Forum

7th meeting @ Jeju, South Korea
1 - 3 November 2023

Sang-Un Ahn
On behalf of ATCF Organizers

Organization

- Co-chairs of Asia Tier Center Forum :
Chinorat Kobdaj (SUT)
Heejun Yoon (KISTI)
- Local Organization Chair for ATCF7 : Heejun Yoon, Buseung Cho (KREONet), Seo-Young Noh (CBNU)
- Steering Committee :
SUT (represented by Chinorat Kobdaj),
Hiroshima U. (represented by Toru Sugitate),
TIFR (represented by Kajari Mazumdar),
Konkuk U. (represented by Sun Kun Oh),
KISTI (represented by Heejun Yoon)

Previous Meetings

- ATCF1 @ KISTI in Daejeon, South Korea, September 2015
 - 24 participants from 10 Asian sites (ASGC, COMSATS, Hiroshima U., U. Tsukuba, CCNU, SUT, LIPI, VECC, TIFR, KISTI), TEIN*CC, KREONet, ESnet and CERN
- ATCF2 @ SUT in Nakhon Ratchasima, Thailand, November 2016
 - 20 participants from 7 Asian sites (*COMSATS, Hiroshima U., *CCNU, NECTEC, SUT, LIPI, KISTI), *TEIN*CC, KREONet, ThaiREN, UniNET, GÉANT and CERN
- ATCF3 @ KISTI in Daejeon, South Korea, October 2017
 - 30 participants from 13 Asian sites (ASGC, COMSATS, Hiroshima U., IHEP, KISTI, *VECC, LIPI, U. Malaya, SUT, TIFR, ICEPP, U. Tsukuba, *CCNU), ESnet, KREONet, MYREN, SINET, TransPAC, TEIN*CC and CERN
- ATCF4 @ SUT office in Bangkok, Thailand, November 2018
 - 30 participants from 13 Asian sites (CCNU, IHEP, *LIPI, VECC, *TIFR, U. Tsukuba, KEK, ICEPP, Hiroshima U., KISTI, COMSATS, NCP, SUT), TEIN*CC, KREONet, NDGF and CERN
- ATCF5 @ TIFR in Mumbai, India, October 2019
 - 34 participants from 7 Asian sites (*LIPI, VECC, TIFR, ICEPP, Hiroshima U., KISTI, SUT), TEIN*CC, KREONet, U. Wisconsin-Madison and CERN
- ATCF6 in Krabi, Thailand, November 2022
 - 24 participants from 15 Asian sites (SUT, CU, RUTI, BRIN, VECC, TIFR, ASGC, *Fudan, *CCNU, ICEPP, KISTI), TEIN*CC, KREONet and CERN

(*) Remote participation



ATCF Summary Talks

- ATCF1 Summary Report
 - LHCOPN/LHCONE Meeting, October 2015 (William Johnston)
- ATCF2 (+ATCF1) Summary Report
 - WLCG GDB @ ISGC2017, 8 March 2017
- ATCF3 Summary Reports
 - LHCOPN/LHCONE Meeting @ HEPiX Fall 2017, 16 October 2017 (Edoardo Martelli)
 - Belle II Network Meeting @ SC17, 16 November 2017
 - WLCG GDB @ CERN, 13 December 2017
- ATCF4 Summary Report
 - WLCG GDB @ CERN, 12 December 2018
- ATCF5 Summary Report
 - WLCG GDB @ CERN, 20 November 2019
- ATCF6 Summary Report
 - WLCG GDB @ CERN, 11 January 2023
- Visit website for more details : www.atcforum.org

ATCF7

- The 7th series of Asia Tier Center Forum
- Co-located with KREONet Workshop 2023
- Sponsors: KREONet, SUT, CU, PMUB
- 37 registered participants (+3 remote)
- 13 institutes from 7 countries



KREONET WORKSHOP 2023
Unveiling the TERA KREONET for Digital Transformation and Science Discovery
2023. 11.1(수)~3(금) 메종글래드 제주

행사프로그램

| 날짜 | 시간 | 세션명 | 내용 | 발표자 |
|-------------|-------------|------------------------------------------------------|-----------------------------------------------|------------------------|
| 11/1 (수) | 12:00~13:30 | | 중식 및 등록 | |
| | 13:30~14:10 | 튜토리얼 세션 1 : 첨단 연구망 서비스 (좌장 : 김승해 팀장/ KISTI) | 1. KAFE (Korea Access Federation) 연구교육인증연합 기술 | 조진용 박사 / KISTI |
| | 14:10~14:50 | | 2. 대용량 데이터 전송 솔루션 : KREONET Globus | 홍원택 박사 / KISTI |
| | 14:50~15:40 | | 3. Kubernetes(K8S)와 OpenStack 클라우드 기술 | 김기현 선임, 장만석 선임 / KISTI |
| | 15:40~16:00 | | Break Time | |
| 11/2 (금) | 12:00~13:00 | | Break Time | |
| | 13:20~12:40 | KISTI (좌장 : 최영애 팀장/ 원동희 팀장 / KISTI) | 3. KREONET(K8S)과 OpenStack 클라우드 기술 | 최영애 팀장 / KISTI |
| | 13:10~13:20 | | 5. 대용량 데이터 전송 솔루션 : KREONET Globus | 홍원택 박사 / KISTI |

- SUT(TH), Chulalongkorn U.(TH), Rajamangala University of Technology Isan (TH), *BRIN(ID, former LIPI), VECC(IN), TIFR(IN), IHEP(CN), Hiroshima U.(JP), ICEPP(JP), KEK(JP), CERN(CH), KISTI(KR)




























ATCF7 Agenda

- Round table of Asian sites
 - Site-specific issues regarding resources, operations, R&D, networking, etc.
- Experiments perspectives and updates
 - WLCG, ALICE and Belle II
- LHCONE updates: Asian NRENs and CERN
 - The latest view of LHCONE and related R&D projects
 - The current status of collaborative works within WLCG for LHC data challenges
- KREONet Plenary
- Special sessions: HPC/QC Research Activities

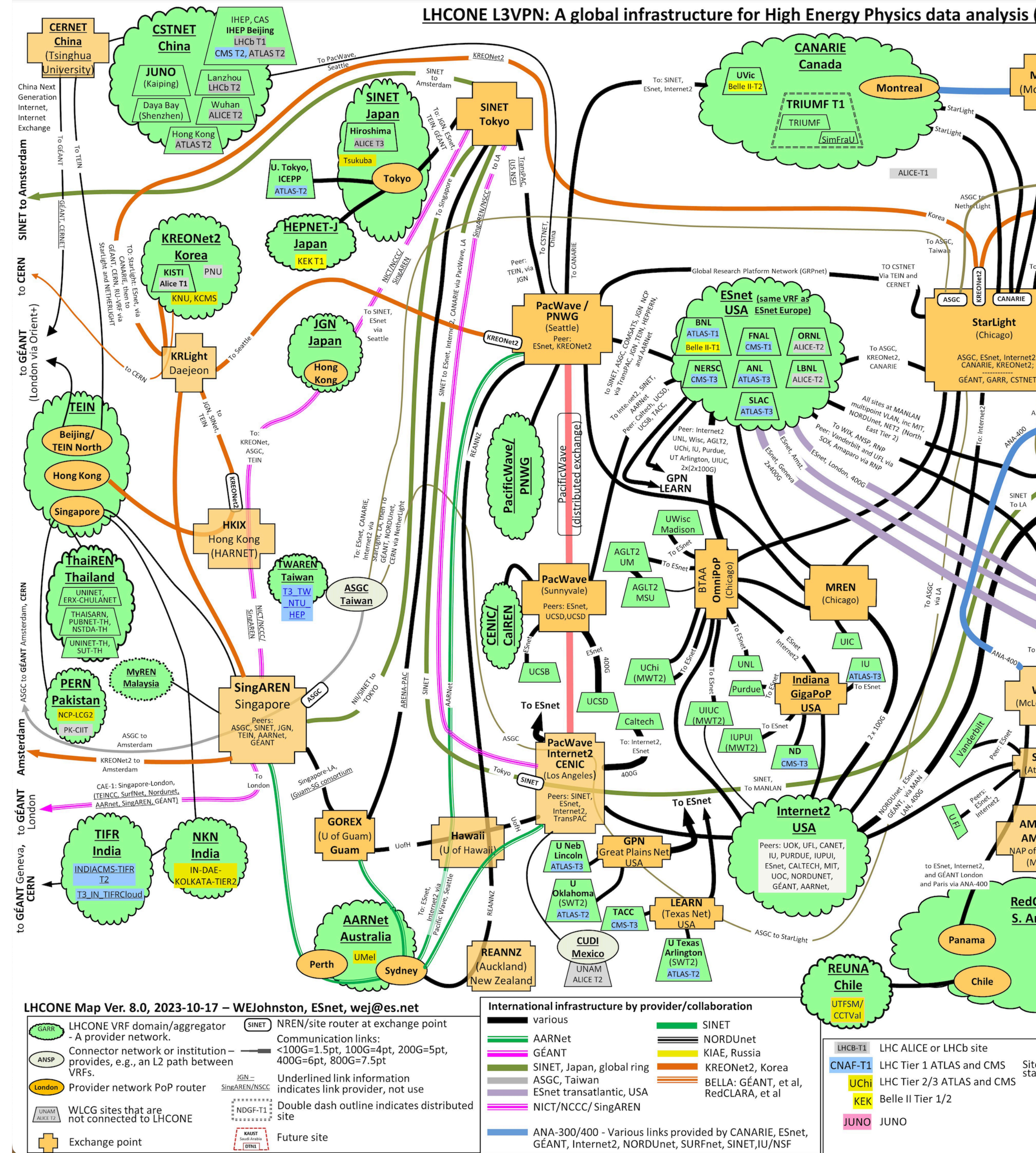
List of Asian sites

- 20 sites from 9 nations
- Mostly LHC sites
 - 2 T1s : ALICE (KISTI), LHCb (IHEP)
 - ASGC downsizing to T2 for ATLAS
- Non-LHC sites
 - 2 T0s : Belle II (KEK), JUNO (IHEP)
 - 2 T2s : LIGO (KISTI, IUCAA)
- WLCG under review identifying actual contributing sites
- More updates expected from sites reports

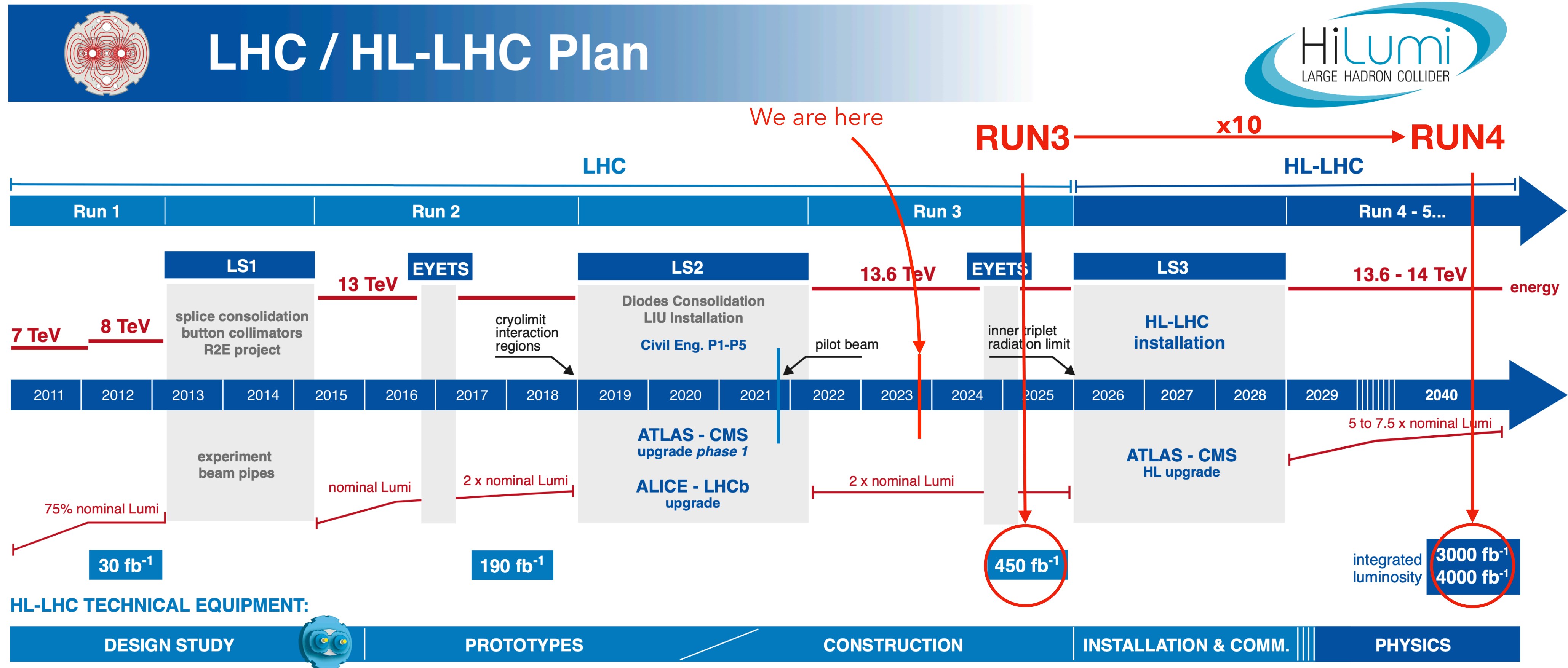
| | Site Name | Nationality | City | VO |
|----|-----------|-------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | CUHK | China | Hong Kong |  |
| 2 | IHEP | | Beijing |     |
| 3 | Lanzhou | | Lanzhou |  |
| 4 | Wuhan | | Wuhan |  |
| 5 | Kolkata | India | Kolkata |  |
| 6 | TIFR | | Mumbai |  |
| 7 | IUCAA | | Pune |  |
| 8 | Cibinong | Indonesia | Cibinong |  |
| 9 | KEK | Japan | Tsukuba |  |
| 10 | Hiroshima | | Hiroshima |  |
| 11 | ICEPP | | Tokyo |  |
| 12 | Tsukuba | | Tsukuba |  |
| 13 | KISTI | South Korea | Daejeon |    |
| 14 | UPM | Malaysia | Seri Kembangan |  |
| 15 | COMSATS | Pakistan | Islamabad |  |
| 16 | NCP | | Islamabad |  |
| 17 | ASGC | Taiwan | Taipei |  |
| 18 | NCHC | | Hsinchu |  |
| 19 | CUNSTDA | Thailand | Bangkok |  |
| 20 | SUT | | Nakhon Ratchasima |  |

LHCONE

- Enriched networking environment
- Years of efforts from NRENs under CERN coordination
- Supporting non-LHC experiments such as Belle II and JUNO
- Becoming a global standard scientific network
- More news from LHCONE update



Data Challenges for Upcoming LHC RUNs



- Data transfer challenge based on the current understanding of HL-LHC network needs
- Commissioning the readiness of the infrastructure in preparation for HL-LHC

KREONet Plenary

- Main event of KREONet Workshop
- Edoardo Martelli will give a plenary talk
 - Followed by several interesting lightening talks
- Real-time interpretation (English) available
- Banquet after the plenary at the same hall



KREONET WORKSHOP 2023

Unveiling the TERA KREONET for Digital Transformation and Science Discovery

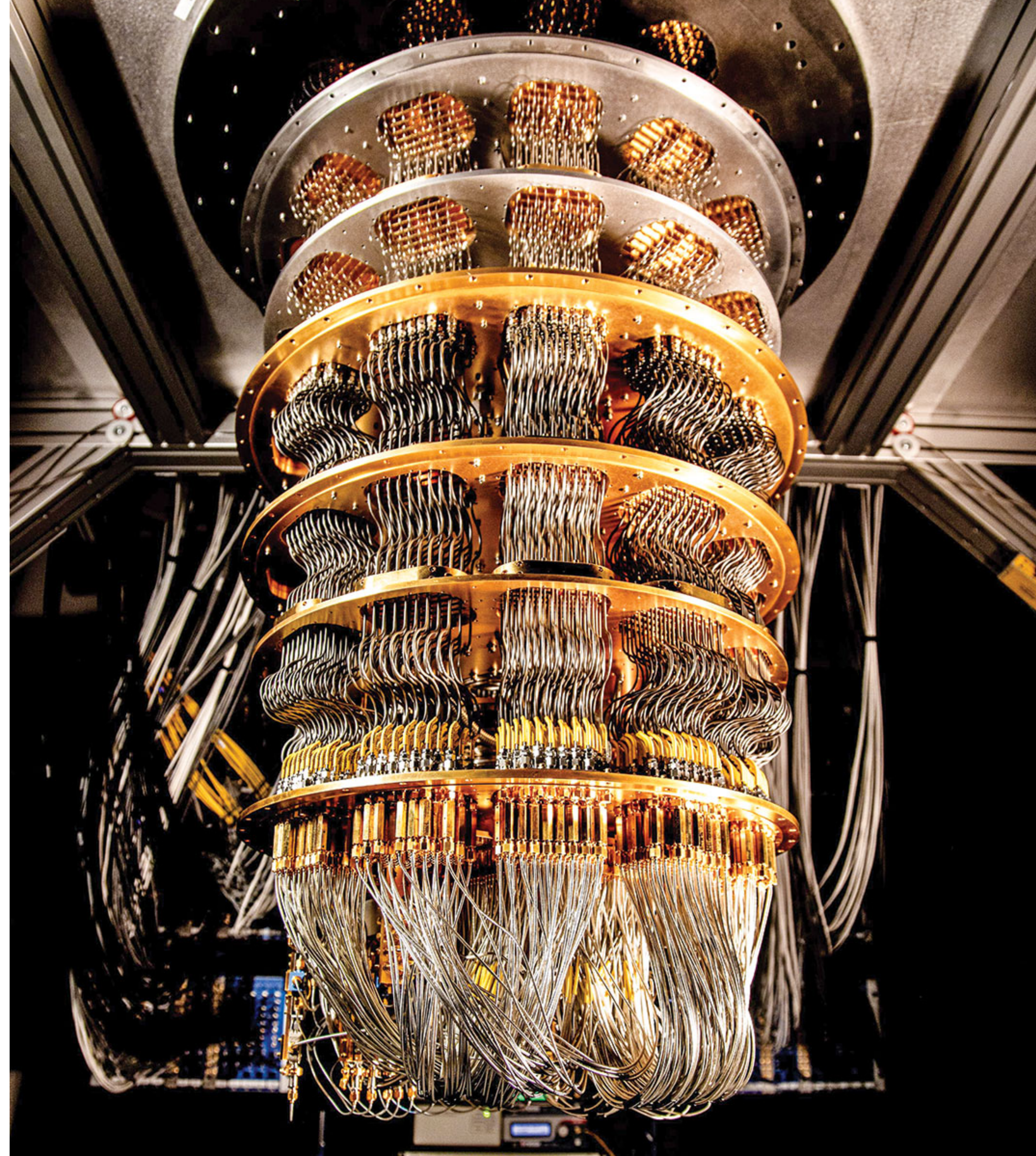
2023. 11. 1(수)~3(금) 메종글래드 제주

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| | 16:00~17:00 | 튜토리얼 세션 II : 차세대 네트워크 (좌장: 조진용 박사/ KISTI) | 1. A Secure Internet Architecture, KREONET SCION | 권중훈 박사 / 취리히 연방 공과대학교 (ETH Zurich) | |
| | 17:00~18:00 | | 2. 6G Vision & Network Architecture Evolution for AI/ML | 신명기 박사 / ETRI | |
| 18:00~ | 석식 | | | | |
| 11/2 (목) | ~09:30 | 조식 및 등록 | | | |
| | 09:30~10:00 | 첨단 네트워크 기술 및 적용 사례 (좌장: 김동균 팀장/ KISTI) | 1. New Optical Journey with Gen6 Coherent Technology and Plugs | 김형관 이사 / Ciena | |
| | 10:00~10:30 | | 2. 세그먼트 라우팅 및 네트워크 자동화 기술 | 김정대 이사 / Cisco | |
| | 10:30~11:00 | | 3. 5G-Advanced 네트워크에서의 AI/ML 적용기술 | 성지훈 선임 / ETRI | |
| | 11:00~12:00 | | 4. 소프트웨어 정의 5G 특화망 및 네트워크 슬라이싱 실증기술/활용사례 | 김영재 대표 / (주)트렌트시스템즈, 오세곡 대표 / (주)엑센솔루션 | |
| | 12:00~13:30 | 중식 | | | |
| | 13:30~14:20 | Plenary 세션 (Tera KREONET Unveil 행사) (좌장: 조부승 센터장/ KISTI) | - 환영사: KISTI 원장 - 축사: 제주특별자치도 오영훈 도지사, 제주대학교 김일환 총장, KREONET 자문위원회의 조만형 위원장, KREONET 실무자협의회 윤태진 의장 - Tera KREONET Unveil 기념식 · Unveiling the TERA KREONET for Digital Transformation and Science Discovery | 조부승 센터장 / KISTI | |
| | 14:20~15:00 | | 기조강연 I : Connected Campus for Future Art | 조충연 교수 / 한국예술종합학교 | |
| | 15:00~15:20 | | Break time | | |
| | 15:20~16:00 | | 기조강연 II : LHCOPN and LHCONE : preparing for the High Luminosity LHC | Edoardo Martelli / 유럽입자물리연구소 (CERN) | |
| | 16:00~16:40 | | 기조강연 III : The SCION Research and Education Network | Adrian Perrig 교수 / 취리히 연방 공과대학교 (ETH Zurich) | |
| | 16:40~17:00 | Break Time | | | |
| | 17:00~18:00 | Lightening Talk (좌장: 조부승 센터장/ KISTI) <5분 릴레이토크> | - 생명(연) 백업·복구체계 모의훈련 사례 소개 | 김대겸 책임 / 한국생명공학연구원 | |
| - 지능형 SIEM을 활용한 위협대응체계 강화 | | | 이도섭 팀장 / 한국핵융합에너지연구원 | | |
| - 과학기술사이버안전 보안 DNS 구축 아이디어 제안 | | | 유영근 실장 / 한국화학연구원 | | |
| - 차세대 블랙홀 관측(ngEHT)을 위한 과학기술적 진보 | | | 정태현 그룹장 / 한국천문연구원 | | |
| - Next Generation Gravitational-wave Observatories : LISA & ET | | | 이창환 교수 / 부산대학교 | | |
| - 60GHz 무선백본연구망 | | | 김기욱 박사 / KISTI | | |
| 18:00~ | 만찬 | | | | |
| 11/3 | ~09:30 | 조식 및 등록 | | | |
| | 09:30~10:00 | 첨단 ICT 기술 및 활용 동향 | 1. ARM 기반 에지 클라우드 및 AIoT 구축 사례 | 유명한 대표 / 엑세스랩(주) | |
| | 10:00~10:30 | | 2. AI 데이터센터 추진현황 및 계획 | 박종선 책임 / 인공지능산업융합사업단 | |

Special Session

- Proposed by Steering Committee
- Invited talks on HPC/QC research activities
 - Dr. Hoon Ryu (KISTI)
 - Prof. Ryu Sawada (ICEPP)



An underwater photograph showing a diver in the center, viewed from behind, swimming towards the surface. The water is clear blue, with sunlight filtering through from above, creating a shimmering effect. In the foreground, there are large, dark coral reefs covered in green algae. The overall mood is serene and peaceful.

**Thanks to all participants and speakers for the contribution !
Enjoy the forum and we hope to have a fruitful discussion for Asian collaboration.**

Special thanks to KREONet and Thai sponsors !!!