Introduction talk in TTC-2023 Fermilab meeting

Eiji Kako (KEK, Japan)
TTC Chair

December 5th, 2023
Mission of the TESLA Technology Collaboration (1)

The mission of the TESLA Technology Collaboration is

- to advance SCRF technology R&D and related accelerator studies across the broad diversity of scientific applications.
- to keep open and provide a bridge for communication and sharing of ideas, developments, and testing across associated projects.

To this end,

- The TTC will support and encourage free and open exchange of scientific and technical knowledge, expertise, engineering designs, and equipment.
Mission of TESLA Technology Collaboration

Mission of the TESLA Technology Collaboration (2)

- The TTC organizes regular collaboration meetings where new developments are reported, recent findings are discussed, and technical issues concluded.

  - Live presentation by in-person and face-to-face discussions in a small room are our essential features in the TTC meeting. We should strictly maintain these special characteristics in the TTC meeting without any exception as a principal to be respected.
Completely in-person meeting

TTC2022 at Aomori
(114 participants)

SRF2023 at Grand Rapids
(300 participants)
Number of participants in TTC

Eiji Kako (KEK, Japan)
Participants in TTC-2023 Fermilab

<table>
<thead>
<tr>
<th>Country</th>
<th>Participants</th>
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<tbody>
<tr>
<td>United States</td>
<td>111</td>
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<tr>
<td>Germany</td>
<td>16</td>
</tr>
<tr>
<td>China</td>
<td>15 \rightarrow 6 (due to VISA issues)</td>
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<tr>
<td>South Korea</td>
<td>9</td>
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<tr>
<td>Japan</td>
<td>8</td>
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<tr>
<td>France</td>
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<td>Italy</td>
<td>7</td>
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<tr>
<td>Sweden</td>
<td>5</td>
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<td>Canada</td>
<td>5</td>
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<tr>
<td>Switzerland</td>
<td>4</td>
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<td>UK</td>
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Participants: 192
Countries: 11

- Industry (17)
- 1 person/Lab. (10)
- 2 person/Lab. (8)
- Chinese Lab. (15)
- Other Labs and Institutes
  - KEK, SLAC, IBS, DESY, TRIUMF, INFN, CERN, ESS, ODU, BNL, STFC, CEA, IJCL, FNAL, JLab, FRIB/MSU

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<tr>
<td>Japan</td>
<td>8</td>
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<td>Germany</td>
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<td>South Korea</td>
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<td>Italy</td>
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<td>Sweden</td>
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<td>Switzerland</td>
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<td>UK</td>
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Invited talks in plenary sessions

SRF accelerators over the world

Construction
Future Project

Special Seminars:
- Science of FRIB
- Quantum computing

Hot topic discussion:
- Conduction cooled SRF cavity technologies

Technical challenge on SRF:
- HOM damping structures
- Beam interactions with high current
- SRF-Gun cryomodules
- Thin film technologies
Discussion on Working Groups

**WG-1:** Progress on High Q and High Gradient activities.
Daniel Bafia (FNAL), Akira Miziyaki (IJCLab), Jinfang Chen (SARI)/Detlef Reschke (DESY)

**WG-2:** Developments and experiences with emerging TEM- and TE-mode cavities: Spoke resonators and Crab cavities.
Jun Tamura (JAEA), Suba De Silva (ODU), David Longuevergne (IJCLab)

**WG-3:** Novel clean assembly techniques, in-situ mitigation, and recovery processes.
Naruhiko Sakamoto (RIKEN), Martina Martinello (SLAC), Enrico Cenni (CEA)

**WG-4:** Design, experience, and operation with high-beta/beta=1 cryomodules and sub-components.
Han Li (IASF), Serena Barbanotti (DESY), Dan Gonella (SLAC)

**Hot topic discussion:** Challenges for conduction-cooled SRF cavity technology
Akira Yamamoto (KEK), Gianluigi Ciovati (JLab), Jens Knobloch (HZB)
VISA issues in TTC2023 at Fermilab

More than 10 colleagues from China cancelled the participation of this TTC meeting due to VISA issues: delay of receipt or late interview.

**WG discussions:**

To maintain live presentation by in-person and face-to-face discussions in a small room:

→ Presentation of back-up speakers in WG talks was decided.
→ Total 8 WG talks by back-up speakers and one cancellation were determined.

**Plenary talks:**

Permission of the remote presentations of two plenary talks from China was decided as special exceptional cases due to unavoidable circumstances.

→ Two talks would be preferable to be presented in the same plenary session in the first day.
30 Participants:

Eiji Kako (Chairman, KEK),
Bob Laxdal (meeting notes, TRIUMF),
Philippe Goudket (ESS), Henry Przybilski (ESS),
Kondo Yasuhiro (JAEA), Hiroshi Sakai (KEK),
Yeonsei Chung (IBS/RISP), Taeksu Shin (IBS/RISP),
Jens Knobloch (HZB), Marc Wenskat (U. Hamburg),
Timo Stengler (U. Mainz/MESA),
Walter Venturini Delsalaro (CERN),
Ting Xu (FRIB/MSU), Naruhiko Sakamoto (RIKEN),
Jinfang Chen (SARI), Carlo Pagani (INFN Milano),
John Mammosser (SNS), Oliver Piquet (CEA),
Anne Marie Valente-Feliciano (JLab),
Peter McIntosh (STFC), Christian Pira (INFN LNL),
Weiming Yue (IASF), Zack Conway (BNL),
Matthias Liepe (Cornell), Dan Gonnella (SLAC),
Roger Ruber (Uppsala University),
Detlef Reschke (DESY), Sergey Belomestnikh (FNAL),
Takashi Ebisawa (QST), Rongli Geng (JLab)

TTC-CB in-person meeting on June 27th during SRF2023

Agenda of meeting

1. Report of TTC Collaboration Board members
2. Report of TTC Executive Committee
3. Report of TTC WG Activities
4. Preparation status of the next TTC meeting
5. Proposal of the future TTC meeting
6. Others
TTC statement and action against Russian government’s invasion of Ukraine

We condemn the military aggression by the Russian government against Ukraine and express our deep dismay at this unacceptable cruel behavior and our grave concerns about its impact. Such tragic events should never happen in the world. Our thoughts go to all the people suffering from the invasion of Ukraine, and to them we extend our deepest sympathy and support in this difficult time. As a peaceful, non-political scientific collaboration we stress the need for this war to end and ask all our TTC colleagues to support the peaceful resolution of the crisis.

While we continue to support the global scientific exchange between SRF technology experts and teams, due to the severity of the situation we are suspending participation of Russian institutes in TTC sponsored events and collaborations, until further notice.

DESY TTC Home-page
https://tesla.desy.de/collaboration_members/

March 11th, 2022
Eiji Kako, Bob Laxdal, Hans Weise, Paolo Pierini, Sergey Belomestnykh, and Akira Yamamoto (TTC Chairs and Executive Committee members).

We should maintain our TTC statement and action.
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<tr>
<th>TTC Executive Committee</th>
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<tbody>
<tr>
<td>TTC chair</td>
<td>Eiji Kako (KEK)</td>
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<tr>
<td>TTC deputy</td>
<td>Bob Laxdal (TRIUMF)</td>
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<td>Regional representative (Europe)</td>
<td>Hans Weise (DESY)</td>
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<td>Catherine Madec (CEA)</td>
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<tr>
<td>Regional representative (North America)</td>
<td>Sergey Belomestnykh (FNAL)</td>
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<td>Anne-Marie Valente (Jlab)</td>
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<tr>
<td>Regional representative (Asia)</td>
<td>Akira Yamamoto (KEK)</td>
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<td>Gao Jie (IHEP)</td>
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<th>TTC Technical Board</th>
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<tbody>
<tr>
<td>TTC-TB chair</td>
<td>Detlef Reschke (DESY)</td>
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<tr>
<td>TTC-TB deputy</td>
<td>Hiroshi Sakai (KEK)</td>
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The EC members will attend the CB and TB meetings, as observers.
Updated TTC Technical Board

Co-chairs
D. Reschke (DESY)
H. Sakai (KEK)

Improvements:
- Gender balance
- Laboratory balance
- Age balance

Cavity and couplers
S. Calatroni (CERN)
R.L. Geng (ORNL)
J. Hao (PKU)
A. Romanenko (FNAL)
K. Umemori (KEK)
J.Y. Zhai (IHEP)
D. Longuevergne (IJCLab)
Z. Conway (BNL)
N. Sakamoto (RIKEN)
L. Monaco (INFN Milano)
L. Popielarski (FRIB)
M. Martinello (SLAC)
P. Dhakal (Jlab)

RF and tuning
F. Gerigk (CERN)
A. Wheelhouse (STFC)
C. Hovater (JLab)

Integration and operation
M. Liepe (Cornell)
E. Harms (FNAL)
J. Branlard (DESY)
M. Nishiwaki (KEK)

Cryomodule and cryogenics
S. Aderhold (SLAC)
T. Arkan (FNAL)
S. Barbanotti (DESY)
J. Mammoser (ORNL)
A. Neumann (HZB)
H. Li (IASF)

Total members = 28
(EU=9, NA=12, Asia=7)
Gender balance: 6/28 = 21%

These members will be maintained during the period of the current TTC chair.
Activities of TTC Working Groups

**Chairs of TTC High-Q/High-G Working Group:**
- Martina Martinello (SLAC)
- Kensei Umemori (KEK)
- Akira Miyazaki (Uppsala U)

TTC High-Q/High-G WG remote meeting was held on Sept. 7th, 2023.

**Summary talk in WG-1**

**Chairs of TTC Thin Film Working Group:**
- Marc Wenskat (U. Hamburg)
- Sebastian Keckert (HZB)

**Plenary talk by A-M. Valente**
at TTC meeting:
Please enjoy insight discussions in WGs on cutting-edge SRF technologies.

Thank you for your attention!