Technical Session 1

"Let's Talk about Development Stories and Future Prospects Ten Years after Commencement of ITER and JT-60SA Projects "

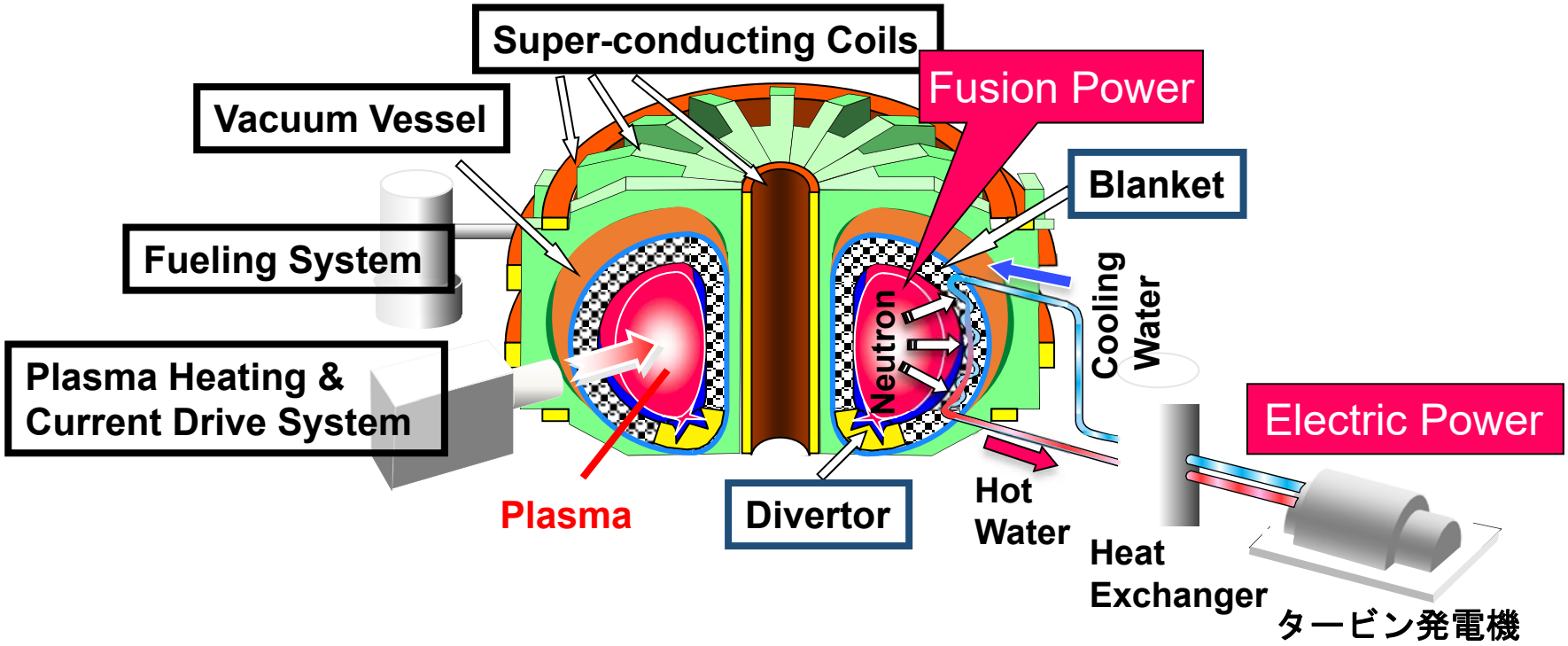
National Institutes for Quantum and Radiological Science and Technology

Yutaka Kamada

QST

Fusion Energy Forum of Japan
Symposium 2018 on the ITER/BA Activities

Fusion Reactor Core：
A Dynamic System integrating 'Super, Ultra, Extreme, Large, Strong, High, Low, Micro' within 30m



Japanese Strategy of Fusion Energy Development

Decision make to enter the DEMO Phase ~ 2035

Scientific Feasibility

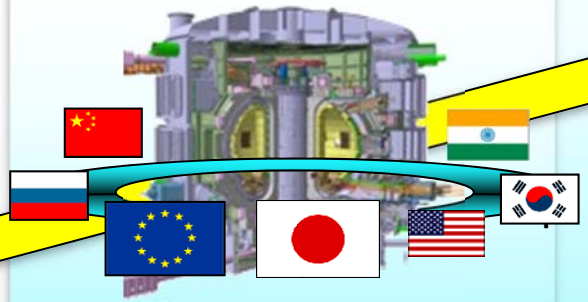
Achievement of Break-even condition

*DT- equivalent fusion gain 1.25
*Ion Temperature 520MºC

JT-60

Scientific & Technological Feasibility

DT Fusion gain = 10
Integrated Fusion Technology



ITER

Technological Demonstration & economical Feasibility

DEMO

Practical Use

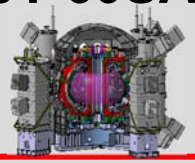
Support ITER

Foster Next Generation

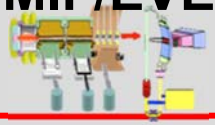
Complement ITER

Broader Approach (BA) Activity

JT-60SA



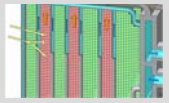
IFMIF/EVEDA



IFERC

DEMO Design

Blanket Development



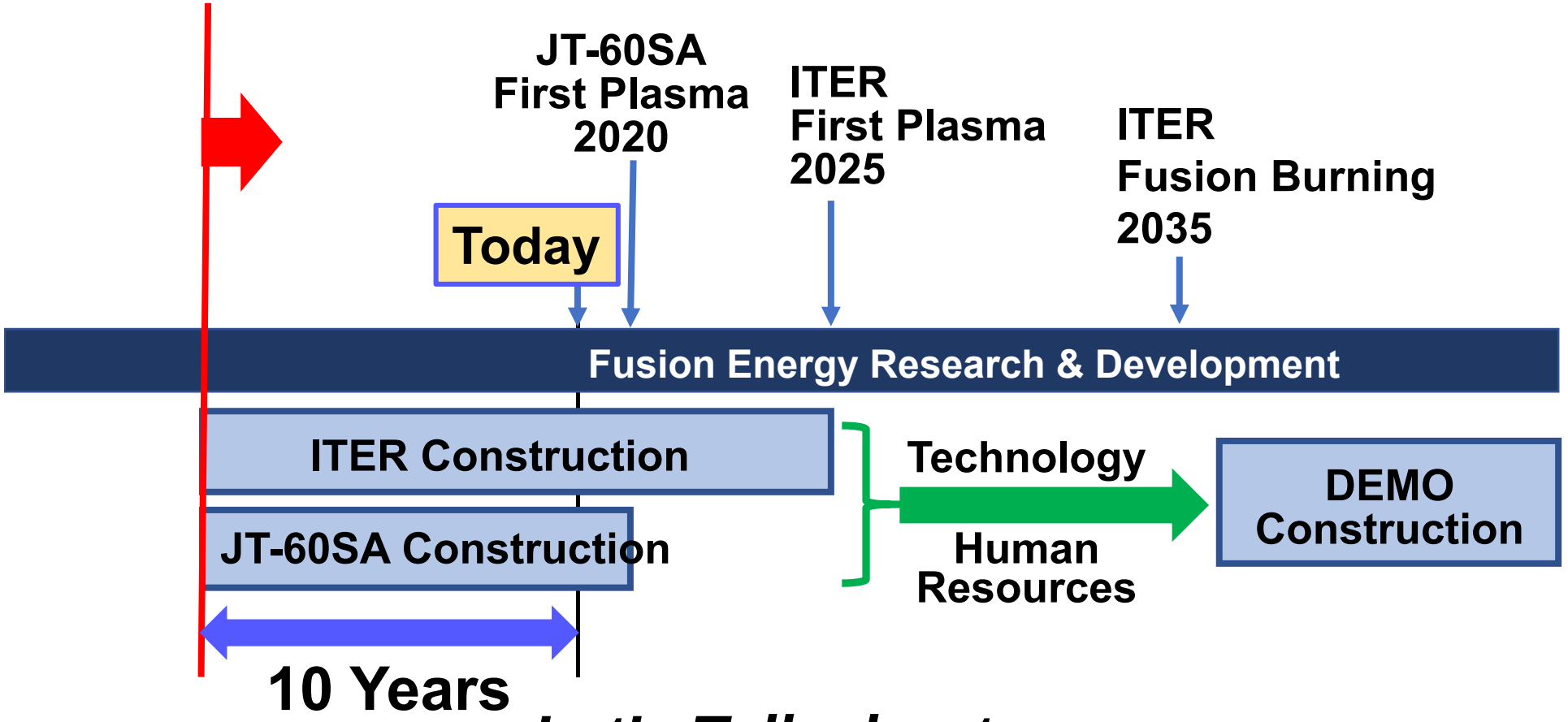
Academic Research

University Tokamaks etc.

FIREX

LHD

Start of ITER & BA
= New phase making our dream come true



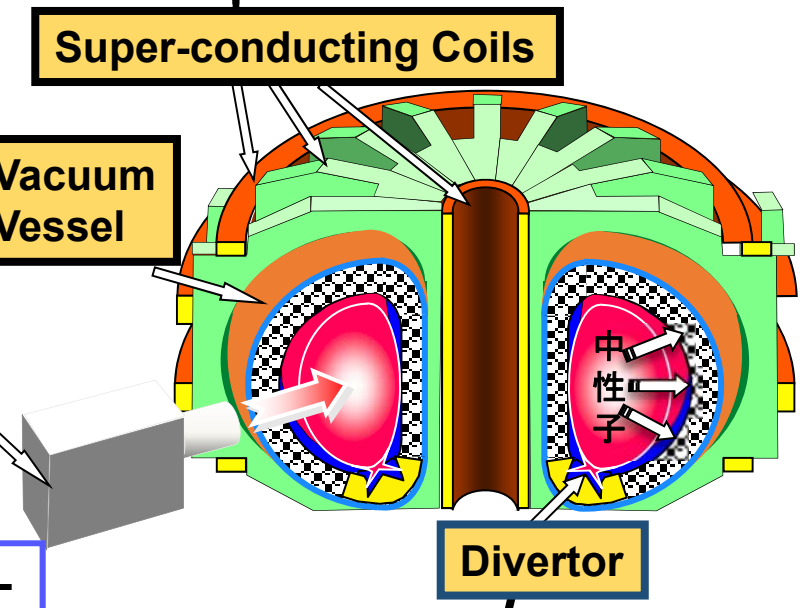
Let's Talk about Development Stories and Future Prospects

1. Technologies Which Have Realized Extremely High Dimensional Precision in ITER TF Coil Manufacturing, and the Future *T. Hasunuma* MITSUBISHI HEAVY INDUSTRIES

2. Technical Challenges of Super-conducting Wire and Magnet for ITER *K. Saito* JASTEC SUPERCONDUCTOR

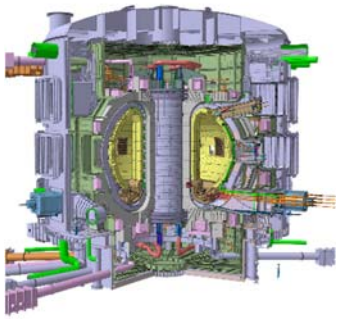
5. Fabrication Results Provide Progress in Large Scale Superconducting Magnets for Fusion Reactors *T. Kim* MITSUBISHI ELECTRIC Changes for the Better

4. Total Engineering Project "Assembly of JT-60SA", the Secret of Success and Technical Challenges *A. Hayakawa* TOSHIBA



3. One-third Century Challenges on Ultra-High-Voltage Application - Progresses in Neutral Beam Injector Technology for Nuclear Fusion - *H. Kawakami* HITACHI Inspire the Next

6. The Effort of MTC in Divertor Development and Prospect of Related Technology *Y. Natsume* MTC Metal Technology Co.,Ltd.



Please enjoy Development Stories and Future Prospects