1. ITER TF coil and its procurement in Japan

- magnet system
- Conductor elongation in length
- High accuracy winding technique
- Full scale trial

1DP heat treatment
- N11, DP winding was completed with satisfying target accuracy of ±0.02% (Elongation < 0.01%)
- TF coil is demonstrated by TF model coil (TFMC)

Basic technique of TF coil WP manufacture
- Transfer, Full scale: those of TFMC
- Allowable strain of TF conductor <0.1%
- Tight tolerance is challenging

Most critical challenges (Transfer)
- TF conductor elongation after heat treatment > ±0.05%
- Other sources originating error: Winding, RP and dimension measurement (Gap between conductor turn insulation and RP groove surfaces = ±1mm or 1.5mm)
- Original tolerance = ±0.02% in length

Heat treatment of 1RP sub-assemblies are assembled to fit RP groove length to heat-treated winding length.
- Relaxed tolerance in conductor length = ±0.24%

- Strategy to accelerate full-scale trials
- 1st full scale trial
- 2nd full scale trial

- Heat treatment
- Conductor elongation

2. Technical issues and optimized manufacturing plan

3. Full scale trials for TF coil winding pack manufacture

4. Progress in TF coil series production

5. Summary

Full-scale trials are performed to qualify the optimized manufacturing plan of ITER TF coil WP manufacture in Japan. The major achievements and progress are as follows:
- High accuracy of winding to control conductor length with ±0.01% was demonstrated.
- Heat treatment oven was developed with highly accurate temperature control and conductor elongation is predicted to be 0.06% ± 0.02%.

From these successful achievements, JADA started series production of TF coil. The present achievements are as follows:
- 3S DP winding was completed with satisfying target accuracy of ±0.01%.
- 1st DP was heat treated and elongation of conductor was within target accuracy of ±0.02%.

In addition, the delay from 2011 is being recovered.