

Tentative schedule of the WPTE devices

AUG, MAST-U, TCV and WEST are planned to operate in 2025 as shown below. This general schedule might be subject to adjustments, but it gives a good overview of the overall running time.

- AUG
 - ✓ Plasma operations in 01/2025-07/2025, Short vent in August. Restart 10/2025
 - ✓ Full utilization of the new upper divertor expected from 01/2025 onwards
- MAST-U
 - ✓ Ongoing MU04 campaign until 07/2025
 - ✓ Lower cryopump operational throughout the campaign
- TCV
 - ✓ Semi-continuous operations in 2025 with small breaks, e.g., for changing and installing baffles; start with non-baffled operations in 01/2025
 - ✓ Additional X2 lateral (0.9 MW) and X3 top-launched (0.9 MW) ECRH heating in 2025
- WEST
 - ✓ C11 campaign in 01/2025-04/2025
 - ✓ C12 campaign in 09/2025-12/2025
 - ✓ Two ICRH antennas available throughout the 2025 campaigns and two gyrotrons in late 2025 (<2 MW/10 s)

Year	2025												
Months	Jan.	Feb	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
AUG	Blue							Yellow		Blue			Pink
TCV	Blue											Pink	
MAST-U	Blue					Yellow							
WEST	Pink	Blue			Yellow				Blue			Pink	
	Shutdown		Restart	Campaign	Break								
Years	2025												

Provisional timeline for AUG, MAST-U, TCV and WEST in 2025

Additional information regarding participation in JT-60SA activity in 2025

- JT-60SA
 - ✓ Maintenance and enhancement phase in 2025. No experiments are planned in 2025.
 - ✓ The activities foreseen for JT-60SA are related to analysis of the data from IC-OP1 campaign and modelling for forthcoming IC-OP2 and IC-OP3 campaigns.

2020	2021	2022	2023	2024	2025	2026	2027	2028
IC	Repair + restart	IC & OP1	Maintenance & Enhancement 1 (ME1)	OP2 (9M)	ME2	OP3 (9M)	ME3	OP4 (8M)

Tentative timeline for JT-60SA (as of 2024)

The analysis of IC-OP1 data is expected to focus on the experimental results obtained, which comprises the following topics:

- Wall status and conditioning with different techniques (ECWC, Baking, Glow discharge)
- Operation regime development (Breakdown, Plasma equilibrium and its control, current ramp-up, flat-top and ramp-down, ECRH characteristics) ‘
- MHD, disruption and runaway electrons generation
- Plasma energy and particle confinement

In IC-OP1, a limited set of diagnostics were available (and limited data may be available from each diagnostic). Analyses and modelling of IC-OP1 plasmas should consider the experimental data availability. The scientific topics proposed to be explored for OP2 and OP3 should consider the characteristics of subsystems in JT-60SA in this initial operational phase.

Available subsystems in OP2 and OP3

Neutral beams

In the Initial Research phase, the NBI system consists of eight positive-ion-based NBI (P-NBI) units and one negative-ion-based NBI (N-NBI) unit. The P-NBI consists of two co-current tangential beam units, two counter-current tangential beam units and four perpendicular beam units.

ECRH

In the Initial Research phase, two gyrotrons operating at 110 GHz for up to 5 s and other two multifrequency gyrotrons able to operate at 110 GHz/138 GHz for up to 100 s will be installed.

Diagnostics

Diagnostics systems below will be available in OP2 and OP3. They will be used to evaluate plasma performance, to understand characteristics of plasma behaviours, and to conduct plasma control. Specifications of each diagnostics are shown in <https://www.jt60sa.org/wp/qstadditional-diagnostics/>

- Visible TV camera, Infrared TV camera, EDICAM
- Neutron monitor, Neutron profile monitor
- Thomson scattering (T_e , n_e), ECE (T_e), CXRS (T_i , V_{\square} , V_{\square} , n_c), MSE (j_r), XICS (T_e , T_i , V_{\square}),
- Visible spectrometer (Z_{eff}), VUV spectrometers, D_{\square}/H_{\square} intensity, TESPEL, Bolometer
- CO₂ interferometer/polarimeter, Soft X-ray
- Divertor probes and thermocouples, Neutral pressure, Magnetic sensors
- FIDA, FILD (OP3)

Available analysis tools

A basic experimental data analysis software (eDAS) for the JT-60SA implemented in the Analysis Server, which provides the users with smooth and interactive data analysis environment for the wave form, equilibrium and spatial profile, including the functions of data retrieval from various DBs. Data access libraries for various DBs are available particularly for users who step further into advanced analysis so that they could develop their own tools.

Presentation and publication of obtained results

Participation in topical group meetings and experiment team meetings is expected from the proponents. In such meetings, it is expected that the selected members of the experiment team will discuss their ongoing work and potential contributions to journals and conferences. The JT-60SA pinboard will be used for JT-60SA related publications involving the experiment team.

Data Access

The accepted experiment team members will have to follow and sign the agreement on access to JT-60SA data and use of JT-60SA IT Facilities. They also shall read, understand and follow “Use Policy for JT-60SA IT Facilities”.

Contact

For any question related to participation to JT-60SA, please contact the WPTE Deputy Task Force Leader Jeronimo Garcia (Jeronimo.GARCIA@cea.fr).