



JT-60SA Massive Gas Injection system Status and project plan

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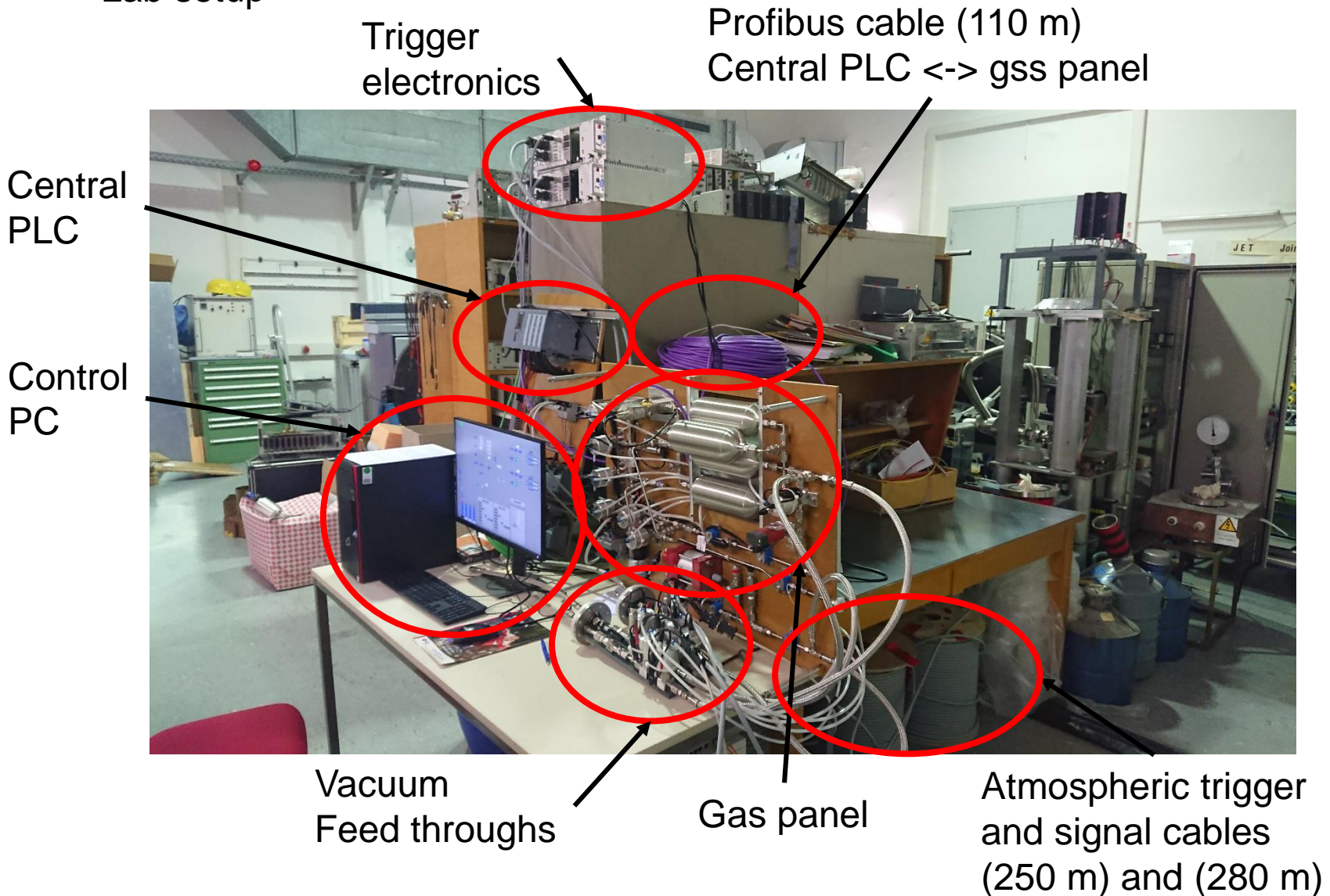
Key properties

	Valve Type 5
Gas reservoir per valve [cm ³]	815
Max. gas pressure [MPa]	6.5
Max. gas amount [Pam ³]	5300
Max. inj. Particles	$1.28 \cdot 10^{24}$
Gas injection time [ms]	~ 10
Injection timing accuracy [ms]	< 1
Gas mixing capability	Up to 4 different gases
Mixing accuracy [bar]	0.2
Valve positions	Upper oblique LFS Se9 + Se18
Expected average distance to separatrix [mm]	~ 100
Temperature of injected material [°C]	~ 50

Current status



Lab setup



Current status



MGI valves in manufacturing



Bellows ordered, will hopefully be delivered soon
Offer for in-vessel cables received, not yet ordered
H2 pressure booster is ready to be ordered

Current status



Control program

Automatic experimental mode (AE)

Automatic machine protection mode (AMP)

Gas mixing fractions in AE mode

Source gases

Trigger signals

Future activities



- Valve testing at IPP
 - Function tests
 - Pressure test at 100 bar (1.25 times design pressure)
 - Vacuum leak test in hot and cold states
 - Inspector from QST on site
- System testing at IPP
 - Full setup of MGI system in the lab
 - Test of manual and automatic operation modes
 - Documentation
- Packing and shipping
 - Transfer of ownership from IPP to F4E
 - F4E organizes packing and transport
- System inspection on arrival in Naka
 - Unpacking and on-site inspection
 - Quick assembly of the system for function test of possible
 - Transfer of ownership from F4E to QST
- Installation of the MGI system in Feb 2024

Project plan



	M 22	J 22	J 22	A 22	S 22	O 22	N 22	D 22	J 23	F 23
MGI valve manufacturing	█									
In-vessel cables manufacturing	█									
MGI valves function tests				█						
Pressure / leak tests					█					
System tests						█				
Packing and shipping								█		
On-site system inspection										█