

# AMS TRD INTEGRATION

Th. Siedenburg, I. Phys. Institut RWTH Aachen

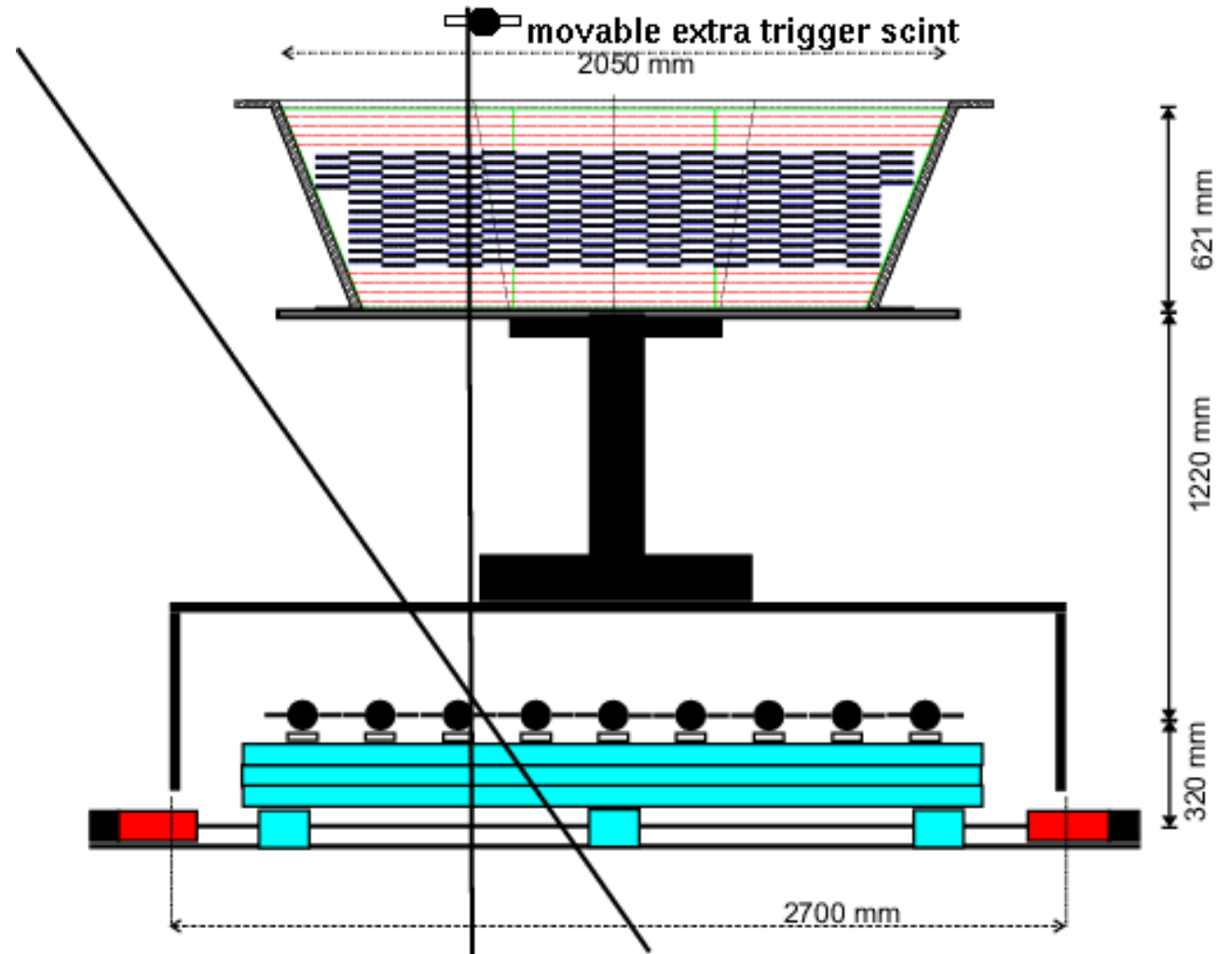
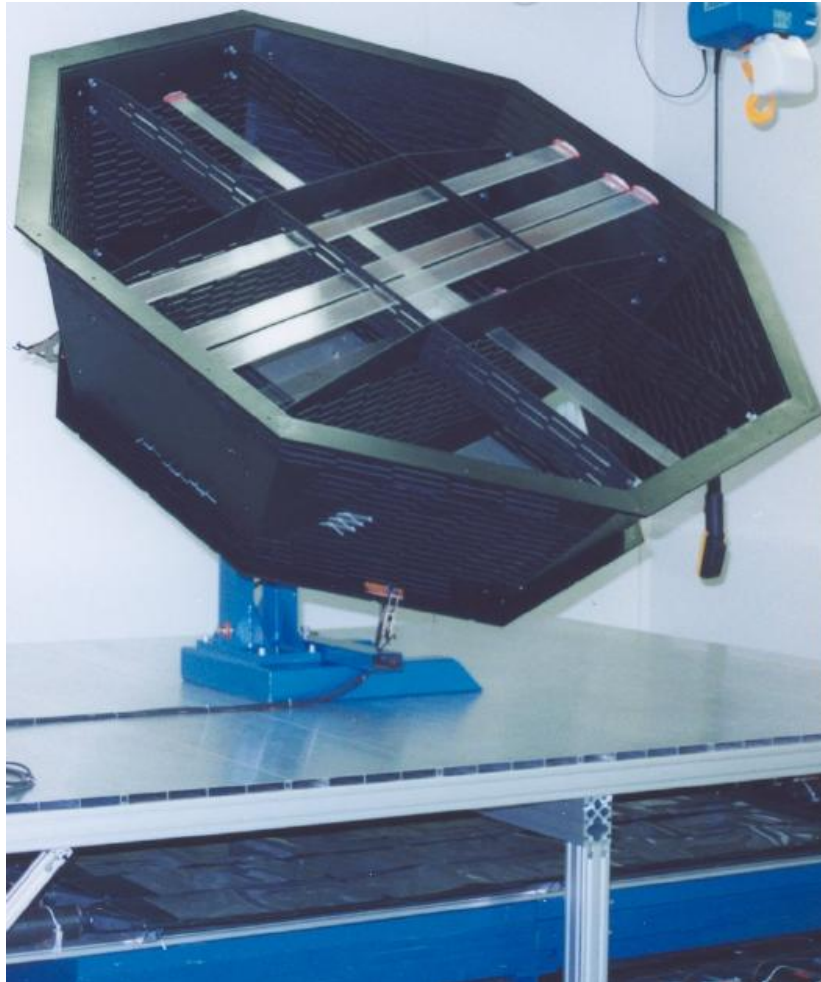
AMS TIM  
CERN, 28.7.2003

# AMS TRD Integration:

# In Aachen on Cosmic Teststand

Nov. 2003  
Empty Octagon

Oct. 2004  
Full System Cosmic Test



Aug 2003	<b>Pre-Assembly</b>	
Oct 2003	DAQ + HV Test (4 module EMI-Jigg)	IEKP/MIT
Nov 2003	Define Module Insertion Procedure	
Dec 2003	<b>Assembly</b>	
	Module Insertion (2 Gasgroups/week)	
	Leakage + Gasgain Measurements	
Jan 2004	Layer 1-4: Gas-Manifold + DAQ Cosmic Test	IEKP/MIT/Roma
Jun 2004	Layer 20	
Jul 2004	<b>Post-Assembly</b>	
Jul 2004	Gas Manifolds + Tubing	MIT/Roma
Aug 2004	Signal + HV cabling	
Sep 2004	<b>Full System Cosmic Test</b>	IEKP/MIT/Roma



# Assembly

– **1 Module + Radiator**

He Leaktest (30 min)

– **Gasgroup** (8 Modules in 2 days)

Ar/CO<sub>2</sub> Cosmics over night (HV)

12h  $\approx$  3000hits/30cm

Ar/CO<sub>2</sub> Leaktest at daytime

– **Layers 1-4 completed**

Gas-Tubing & Manifold Connection

Signal + HV Wiring

HV/Gas Slow-Control Operation

QM-DAQ Test (200 Hz Cosmics)

Power/Timing/Data Reduction

2 QM-UDRs DAQ System

Backplane, UPSFE, DCDC, . . .

2 UHVG + DCDC, USCM

2 Gas-Manifolds (In+Out) + UG-Crate

Cables: 14 x UFE-UDR (1.5m / 3.5m)

14 x HV

2 x Gas-Manifold - UG-Crate

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**1 week**

**Jan 2004**

# Post-Assembly

## – Cabling & Tubing on Rosengitter

Gas-Manifolds + Tubing + Leaktests  
Signal + HV Cabling + Testing

Full UG-Crate

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Jul/Aug 2004

## – Full TRD Cosmic Test

Full DAQ System Test  
Gas System Operation Test  
– Filling/Circulation/Venting  
– Leak Protection/Location  
– Oxygen Monitoring  
– Gasgain Monitor Tubes

Full DAQ System

Full Gas System

- Gas Manifolds: Operation-Time Limit?
- Box-S/C: Commercial System?
- Xe + CO<sub>2</sub> from Gas-Bottles?

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Sep/Oct 2004

## Longterm Test

## Status & Schedule

- Prototype Box-C tested ok by B. Monreal
- Mass spectrometer working and calibrated
- Equipped with eight 1.5m single-straw-tested chambers
- Leaktest and 1st readout test with  $^{55}\text{Fe}$  on Xe/CO<sub>2</sub> ok

- Xe/CO<sub>2</sub> Leaktest

Aug-Oct 2003

Longterm CO<sub>2</sub> diffusion measurement at **zero-flow**  
Pressure drop + mass spectrometer  
Gasgain monitoring with  $^{55}\text{Fe}$

- (Prototype) Box-C operation at different gas-flows  
Gasgain studies

Nov 2003