

AMS TIM & General Meeting ACC Status Report



**P. v. Doetinchem, F. Gillessen, F. Müller, W. Karpinski, Th. Kirn,
K. Lübelmeyer, S. Schael, G. Schwering, M. Wlochal
I. Phys. Institute B, RWTH Aachen
CERN, 23rd April 2007**

ACC System

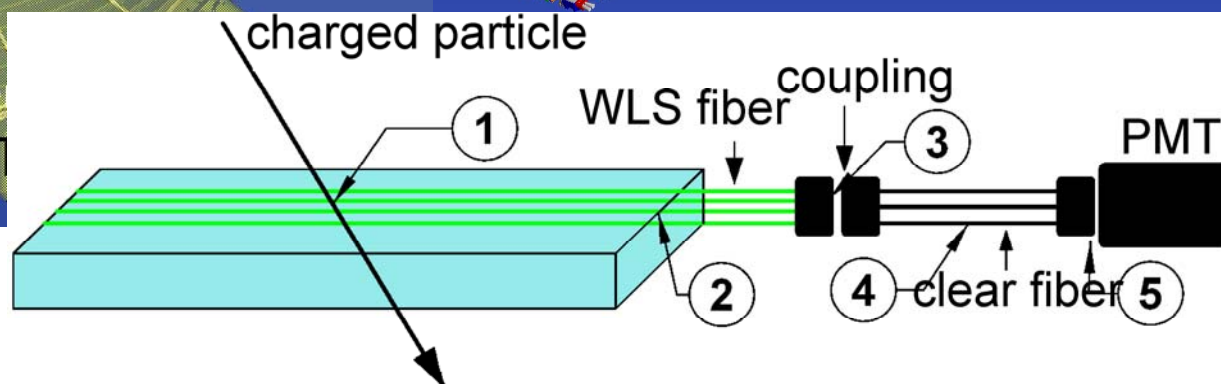
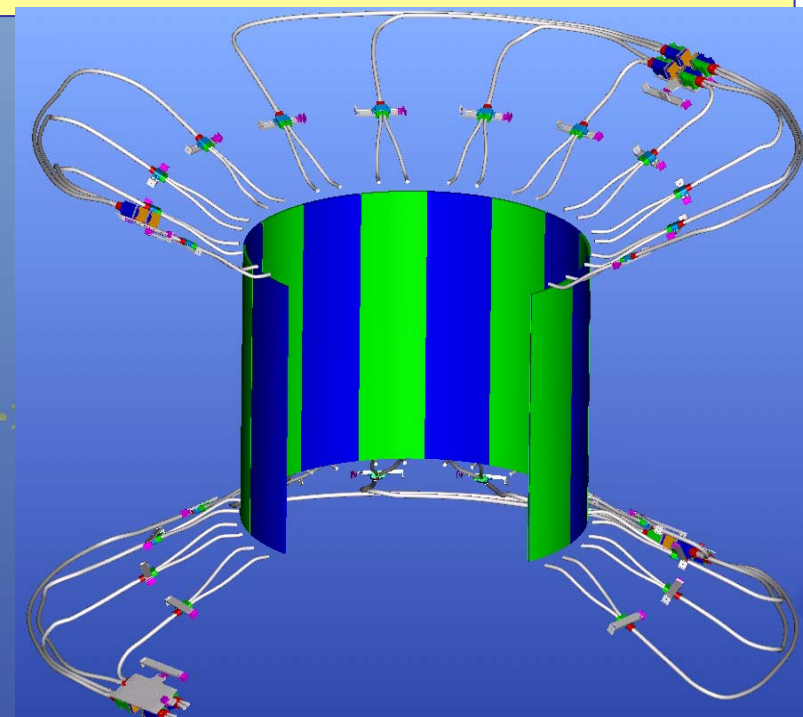
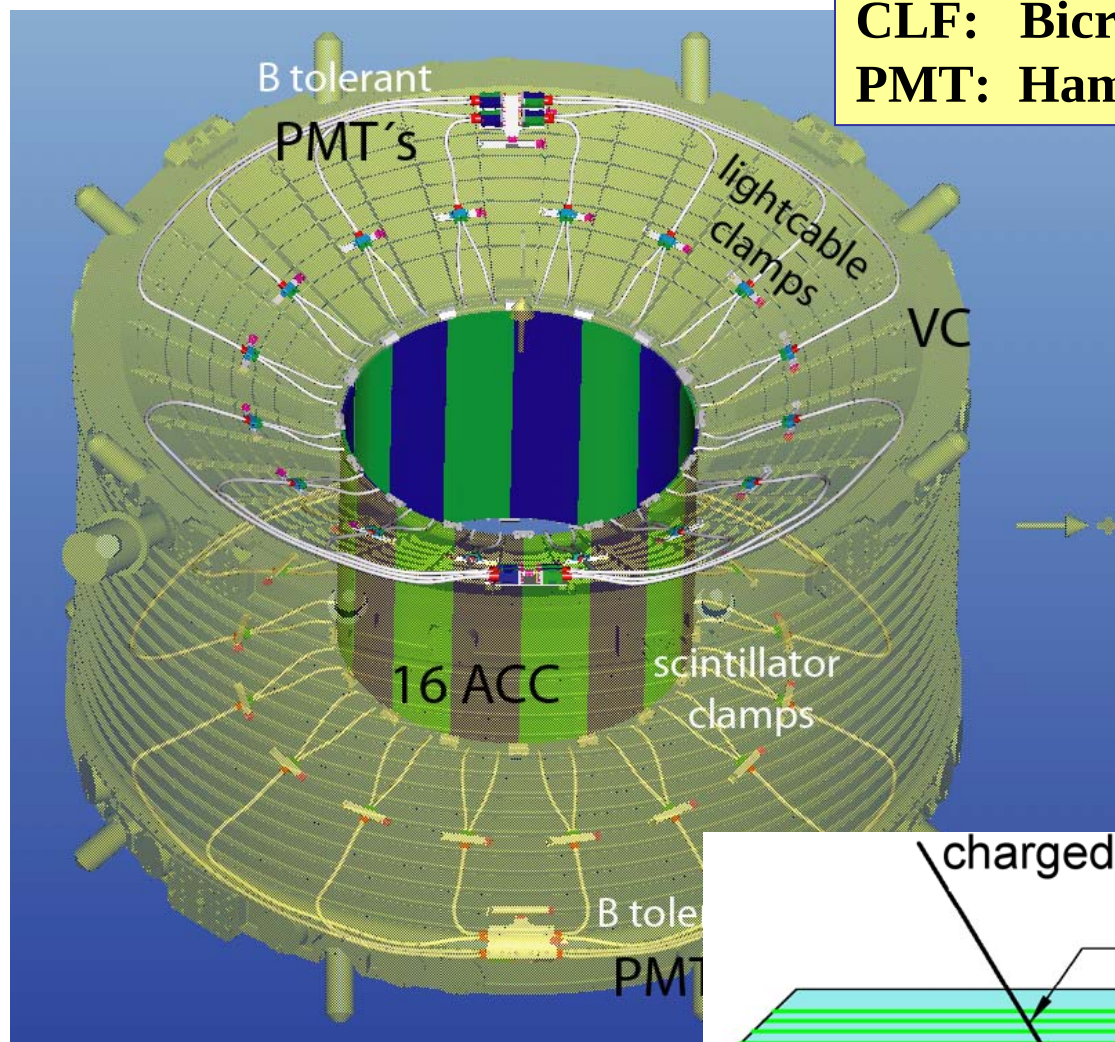
Panel: Bicron BC414

826.5mm x 230mm x 8mm

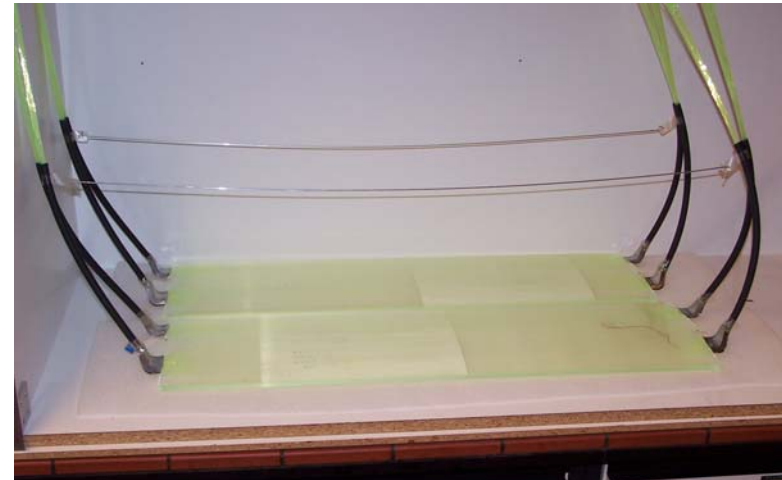
WLS: Kuraray Y-11(200)M

CLF: Bicron BCF-98 / Toray PJU-FB1000

PMT: Hamamatsu R5946



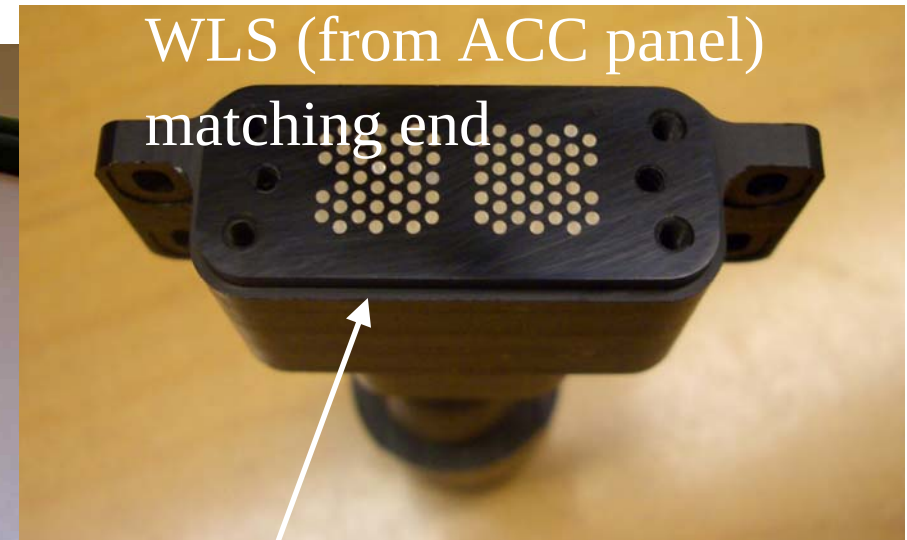
ACC Scintillator Panel: Production Status



ACC-Nr	1.	2.	3.	4.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1														CERN	
2											12-16.10.6	12-16.10.6	12-16.10.6	12-16.10.6	ACC-Labor
3	1.9.6	1.9-6.9.6	1.9-6.9.6	6.7.9.6	8.9.6	8.9.6	11.9.6	11.9.6	14.18.9.6		ACC-Labor				
4	28.2.7	28.2.7	28.2.7	1.3.7	2.3.7	7.3.7	8.3.7	8.3.7	8.3.7		Chemieraum				
5	12.13.9.6	12.13.9.6	12.13.9.6	12.13.9.6	13.9.6	13.9.6	18.9.6	18.9.6	19.20.9.6		Chemieraum				
6	29.8.6	30.31.8.6	30.31.8.6	30.31.8.6	1.9.6	1.9.6	5.9.6	5.9.6	6.9-13.9.6		Chemieraum				
7	19.20.9.6	19.20.9.6	19.20.9.6	19.20.9.6	20.9.6	20.9.6	22.9.6	22.9.6		28.3.7	ACC-Labor				
8	25.9.6	25.9.6	25.9.6	26.9.6	27.9.6	27.9.6					Chemieraum				
9	27.9.6	27.9.6	27.28.9.6	28.9.10.6	4.10.6	4.10.6	6.10.6	6.10.6			Chemieraum				
10	6.10.6	1.3.10.6	1.3.10.6	3.10-7.10.6	7.10.6	16.10.6	19.10.6	19.10.6	20.10.6	24.25.1.7	Zelt				
11	17.10.6	17.18.10.6	17.18.10.6	19.20.10.6	20.10.6	8.11.6	9.11.6	9.11.6	10.11.6	24.25.1.7	Zelt				
12	8.11.6	8.9.11.6	8.9.11.6	10.12.11.6	13.11.6	13.11.6	14.11.6	14.11.6	15.11.6	16.1.7	17.1.7	17.1.7 Zelt			
13	13.11.6	13.11.6	13.14.11.6	14.16.11.6	16.11.6	16.11.6	17.11.6	17.11.6	18.1.7	18.1.7	18.1.7 Zelt				
14	16.11.6	16.17.11.6	16.17.11.6	20.21.11.6	22.11.6	22.11.6	23.11.6	23.11.6	17.1.7	18.1.7	19.1.7	22.1.7 Zelt			
15	22.11.6	22.23.11.6	22.23.11.6	27.11.6	28.11.6	28.11.6	29.11.6	29.11.6	10.1.7	18.1.7	18.1.7 Zelt				
16	8.1.7	8.9.1.7	8.9.1.7	5.8.2.7	12.2.7	13.2.7	14.2.7	14.2.7	21.2.7		Chemieraum				
17	22.2.7	22.23.2.7	22.23.2.7	26.27.2.7	5.3.7	8.3.7	9.3.7				Chemieraum				
18	9.1.7	9.1.7	9.10.1.7	7.8.2.7	12.2.7	12.2.7	13.2.7	13.2.7	17.2.7		Chemieraum				
19	27.2.7	27.28.2.7	27.28.2.7	8.3.7	28.3.7	28.3.7	27.3.7	27.3.7	2.4.7	4.4.7	Chemieraum				
20	17.2.7	20-22.2.7	20-22.2.7	23.26.2.7	2.3.7	2.3.7	7.3.7				Chemieraum				

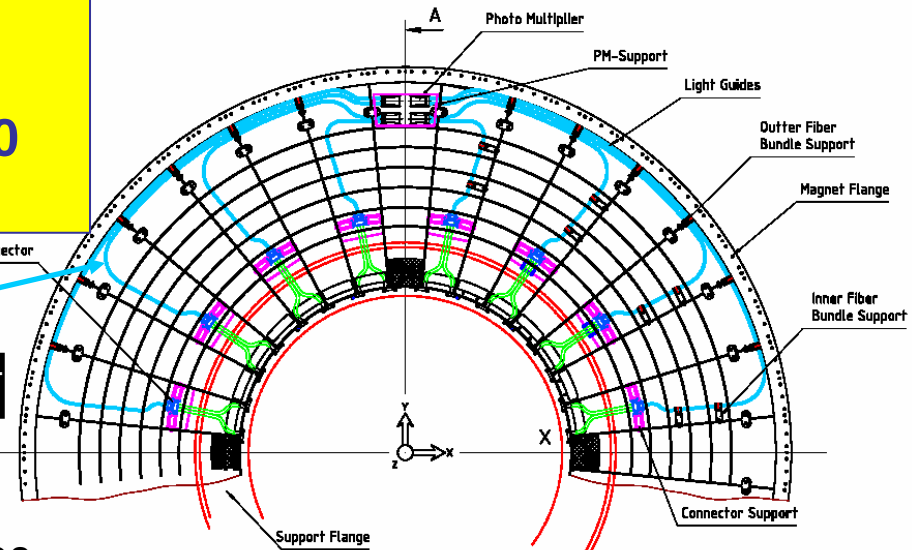
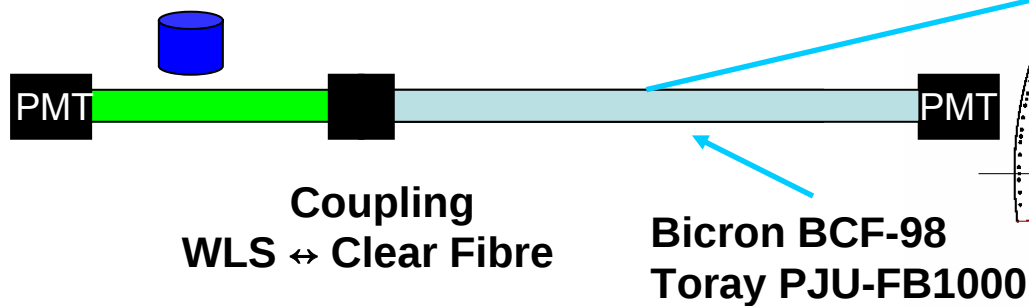


ACC: WLS – Clear Fiber Couplings
Clear Fiber – PMT Couplings



ACC Clear Fibers: Bicron BCF-98 or Toray PJU-FB1000

LED ($\lambda=375$ nm)



Configuration:

Light Output

WLS – PMT:

100 %

WLS – Bicron BCF-98 – PMT:

43 %

Coupling ~ 51% (2.95 db),
 $\lambda \sim 6.6$ m (0.75 DB)

WLS – Toray PJU-FB1000 – PMT:

71 %

Coupling ~ 73% (2.95 db),
 $\lambda \sim 33$ m (0.15 dB)

→ Toray PJU-FB1000: better aperture matching, less damping

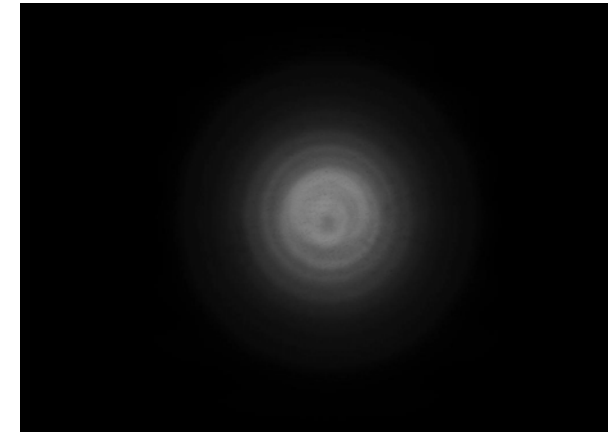
ACC WLS Fibers - Clear Fibers: Farfield Measurements (POFAC FH Nürnberg)



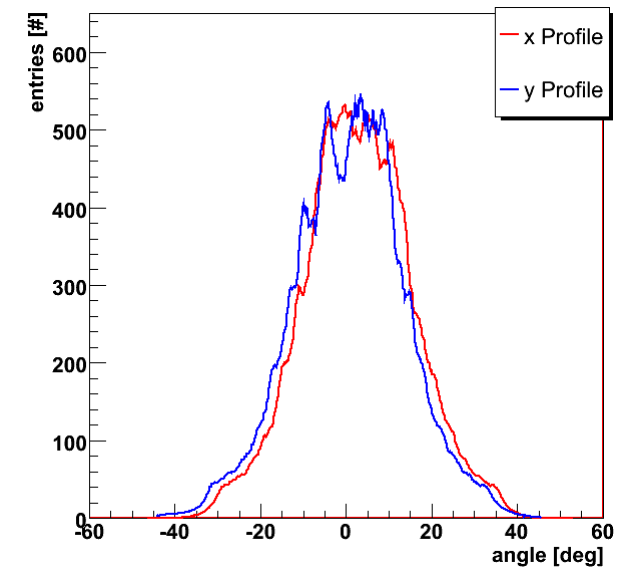
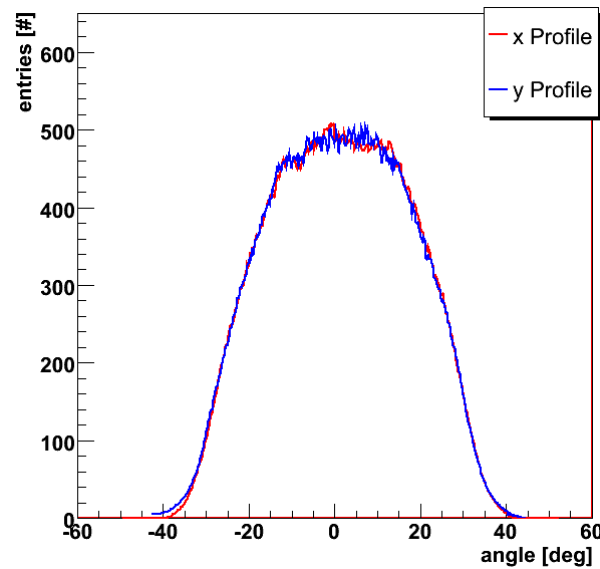
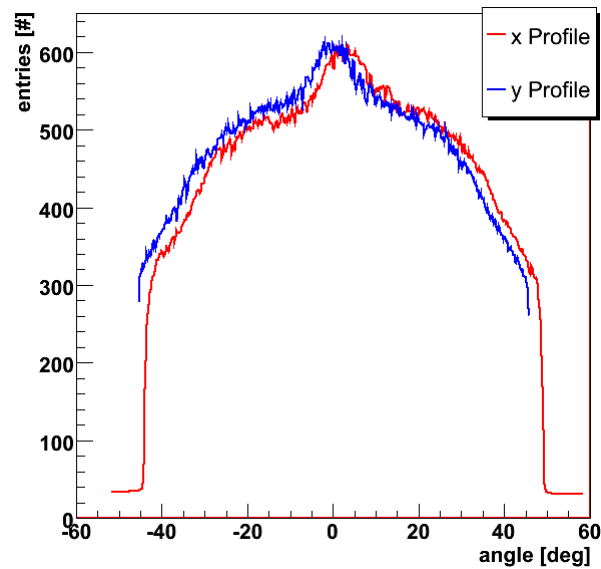
WLS



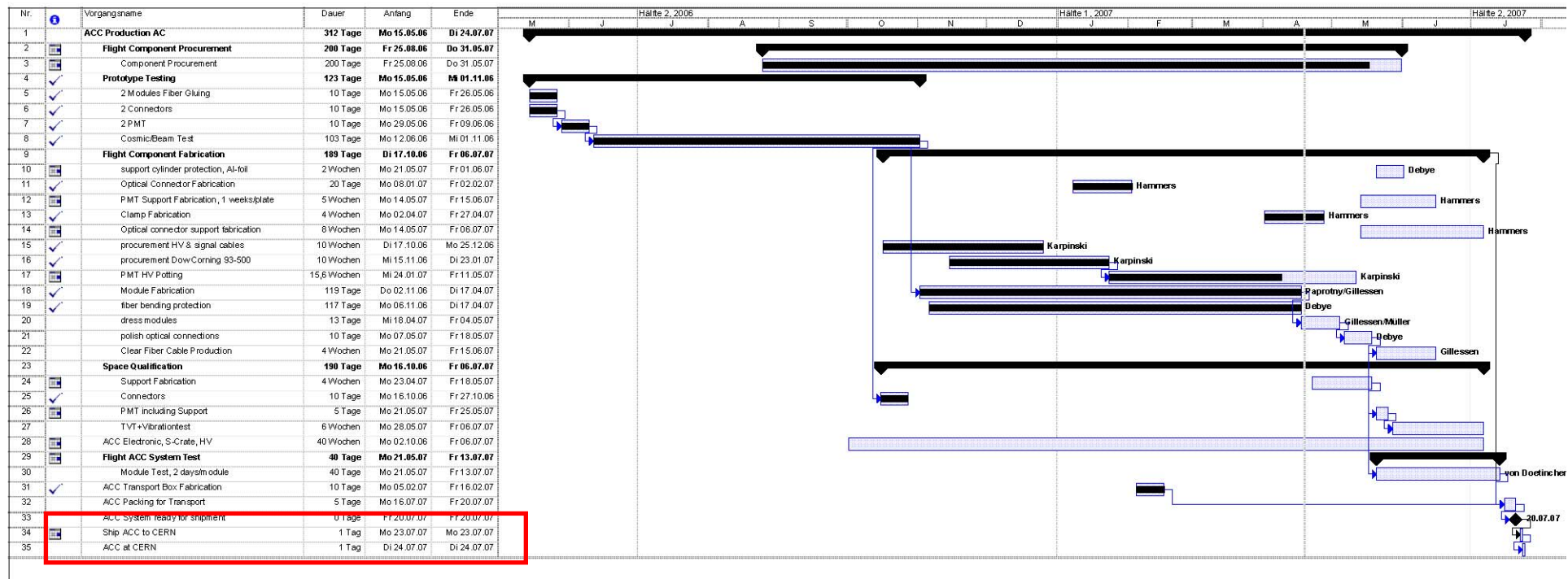
Toray PJU-FB1000

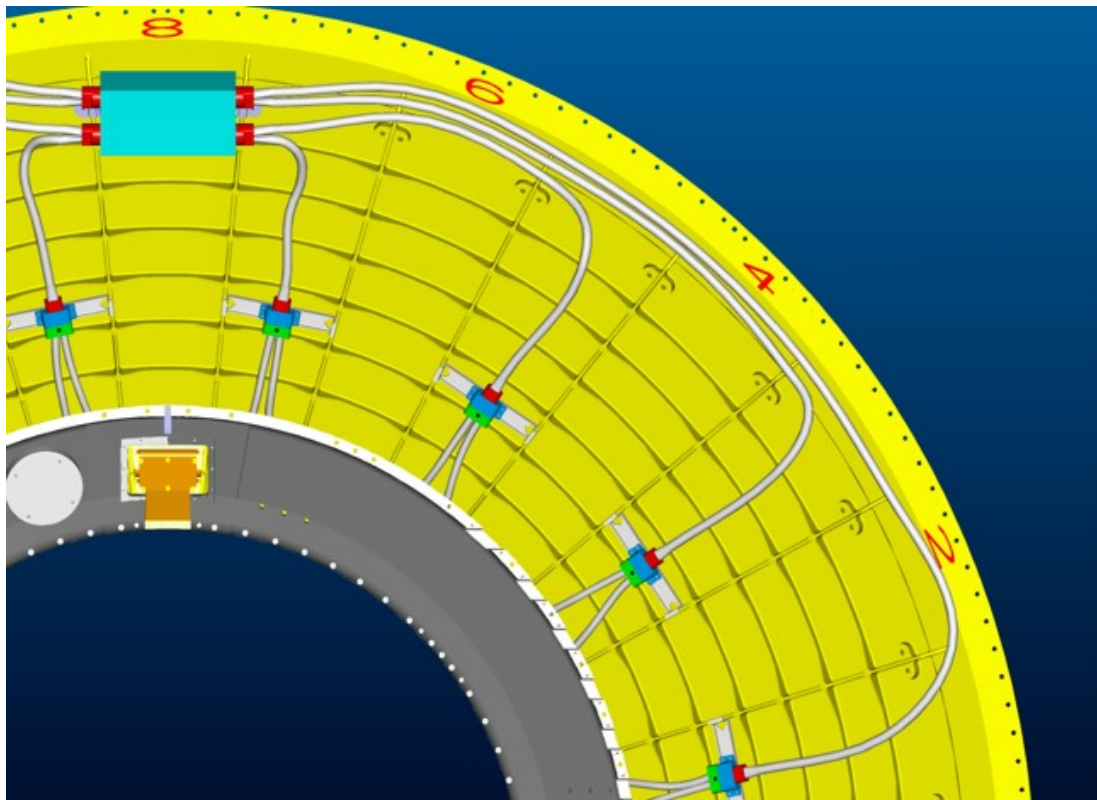


Bicron BCF 98



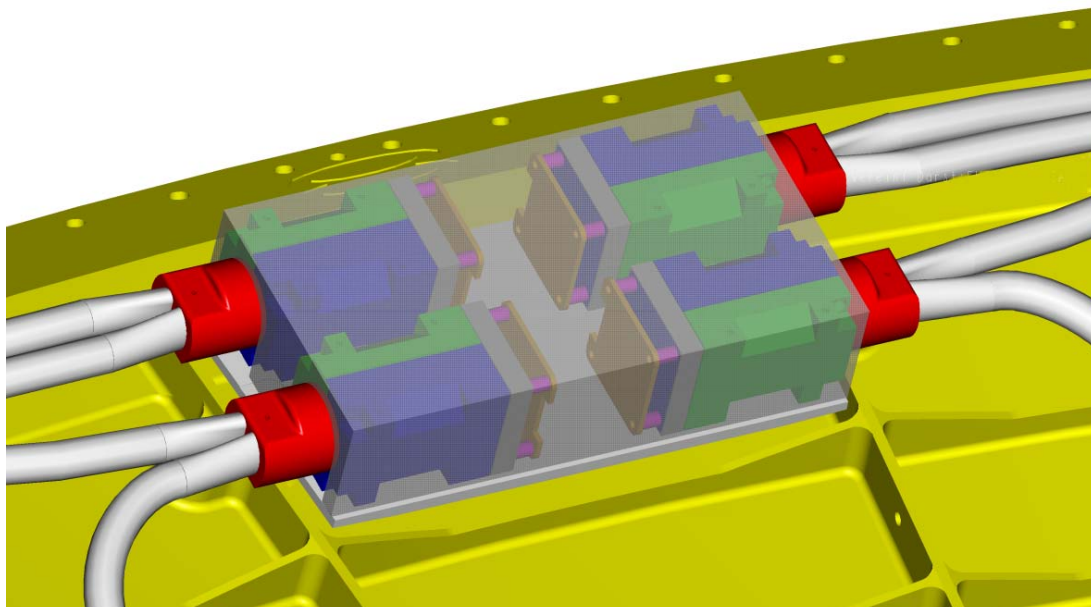
ACC Time Schedule





ACC System Status Conclusion

- Production of flight panels close to end
- Optimization of clear fiber cable couplings is done
- Production and Space Qualification of PMT boxes + PMTs is starting
- Need final electronic for inefficiency studies of ACC system
- ACC will be delivered July 07 to CERN for integration into AMS-02.



ACC Testbeam: T9 East Area Protons 10 GeV



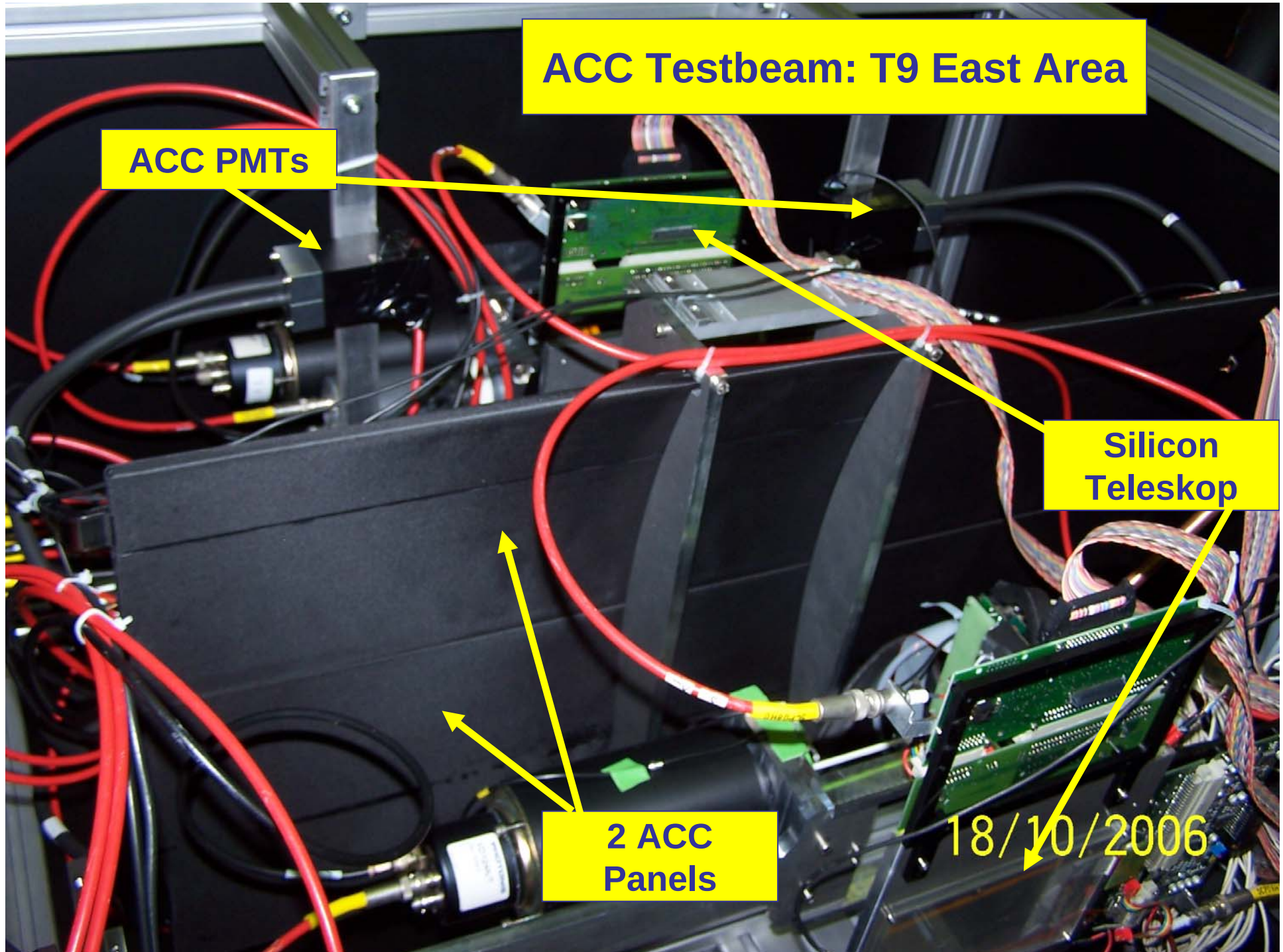
ACC Testbeam: T9 East Area

ACC PMTs

Silicon
Teleskop

2 ACC
Panels

18/10/2006



ACC Testbeam

region covered
by beam