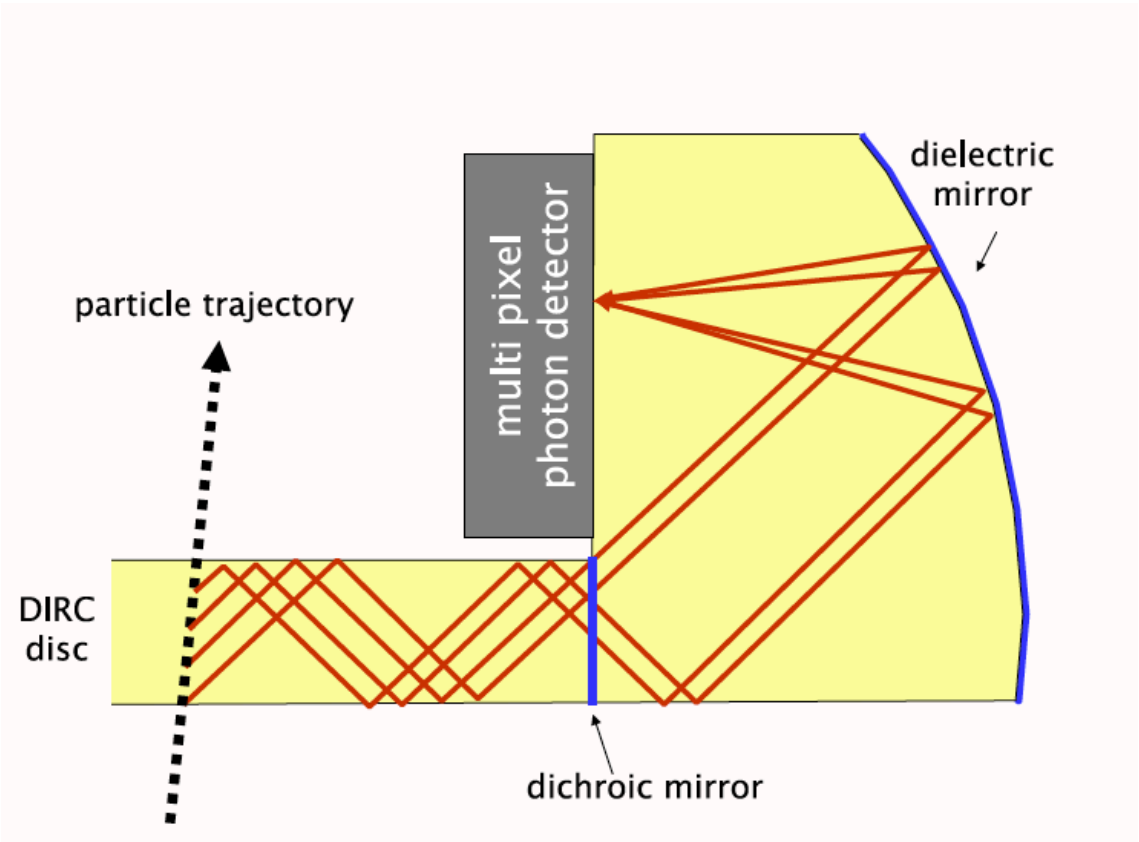
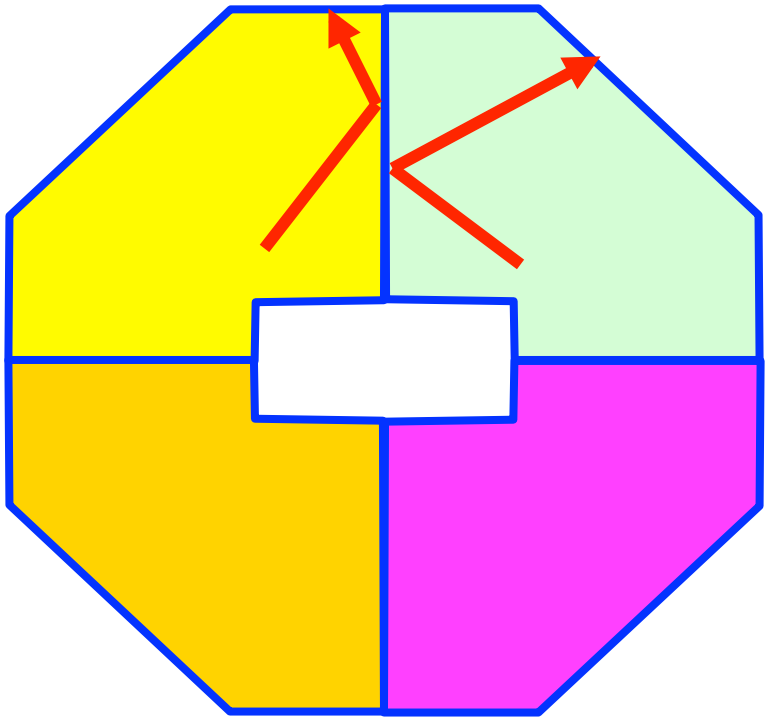
News on the DISC DIRC design

- Combine time-of-propagation design with small light guides for angular measurement (3D-TOP)
  - light guides possibly made from pressed glass



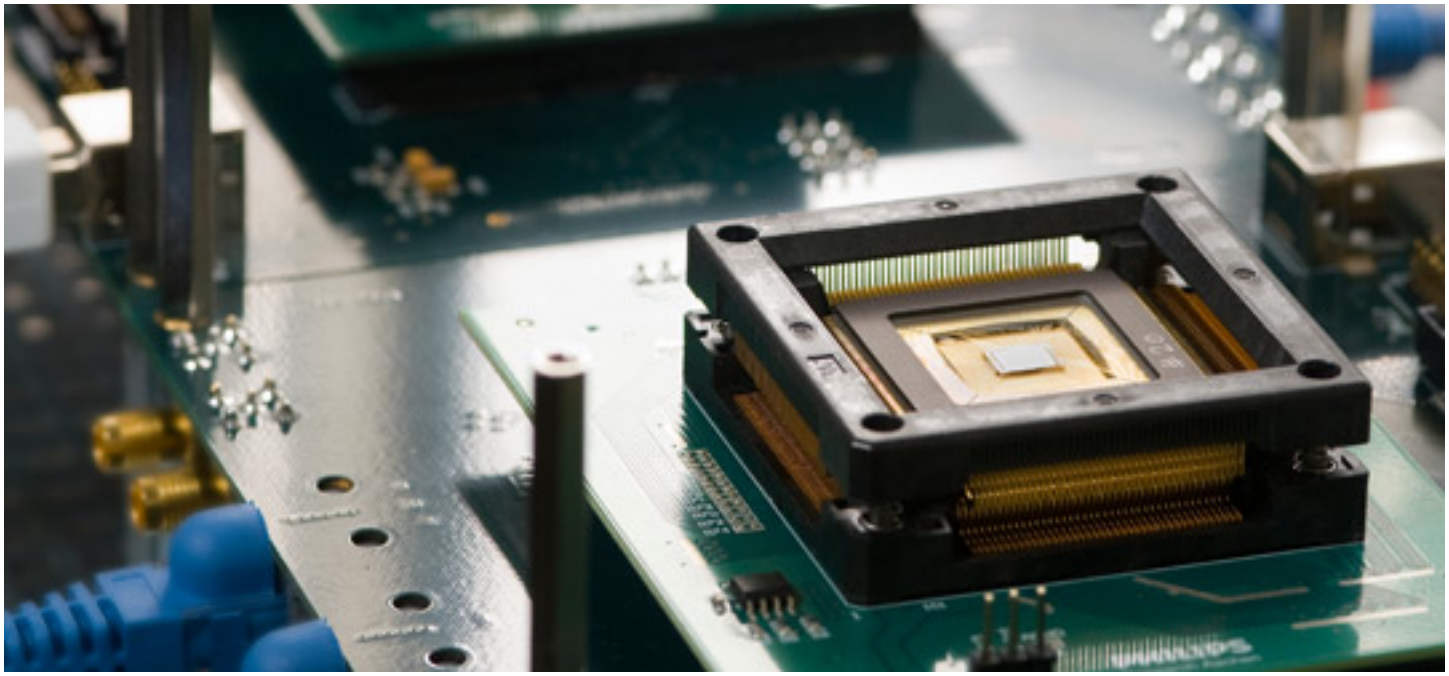
News on the DISC DIRC design



- Produce 4 identical optically (and mechanically) decoupled quadrants:
  - significant cost saving
  - risk reduction (one spare)
  - large simplification in handling (~1 m size)
  - moderate performance reduction
  - additional complexity of reconstruction software

News on the DISC DIRC design

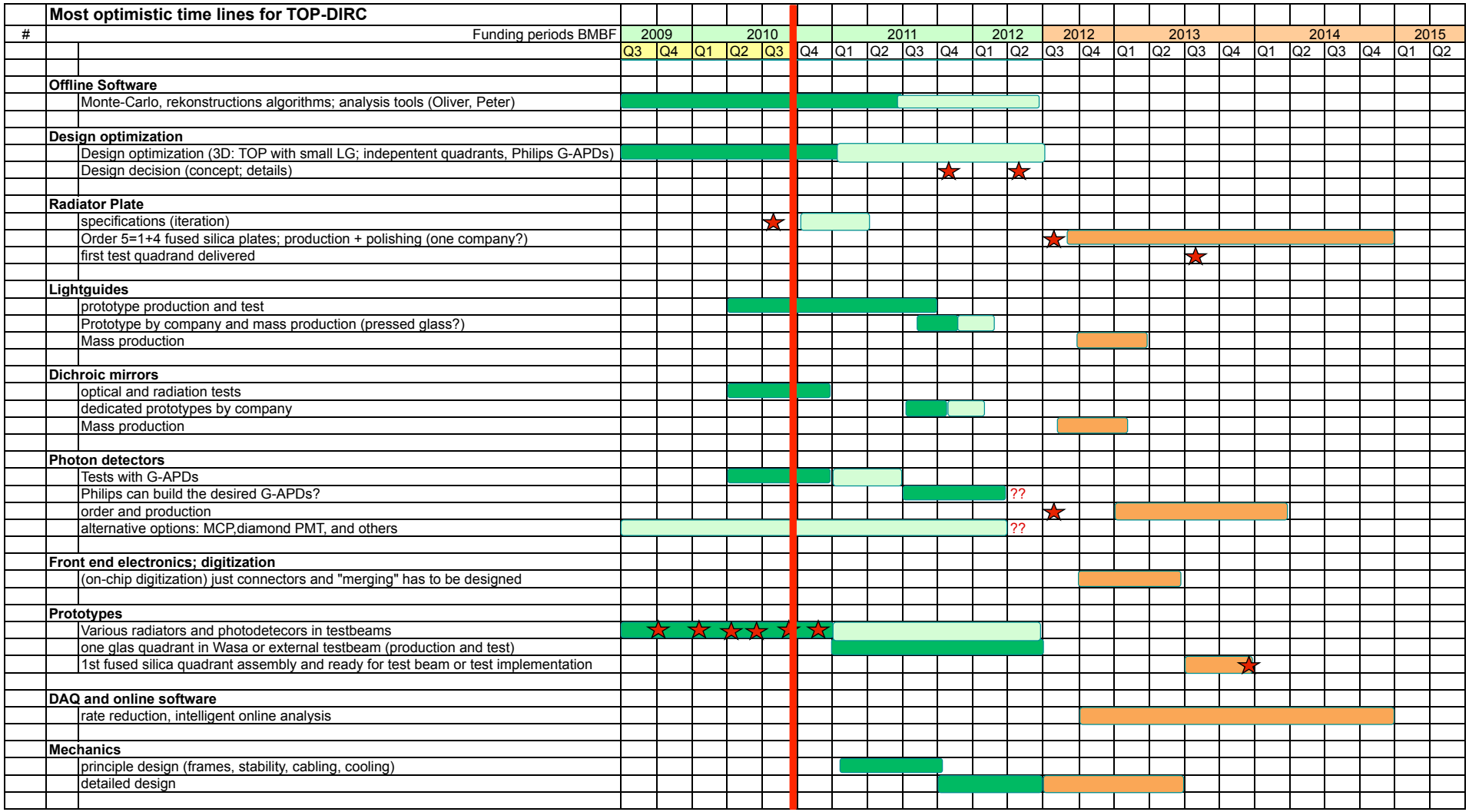
- Use G-APDs (Philips digital Si-PMTs): The only available photon detectors that stand the high light yields and have adequate time resolution. Open points:
  - dark rate (cooling; attached to endcap calorimeter?)
  - radiation hardness (They are at rim behind the barrel calorimeter)
  - costs, timelines



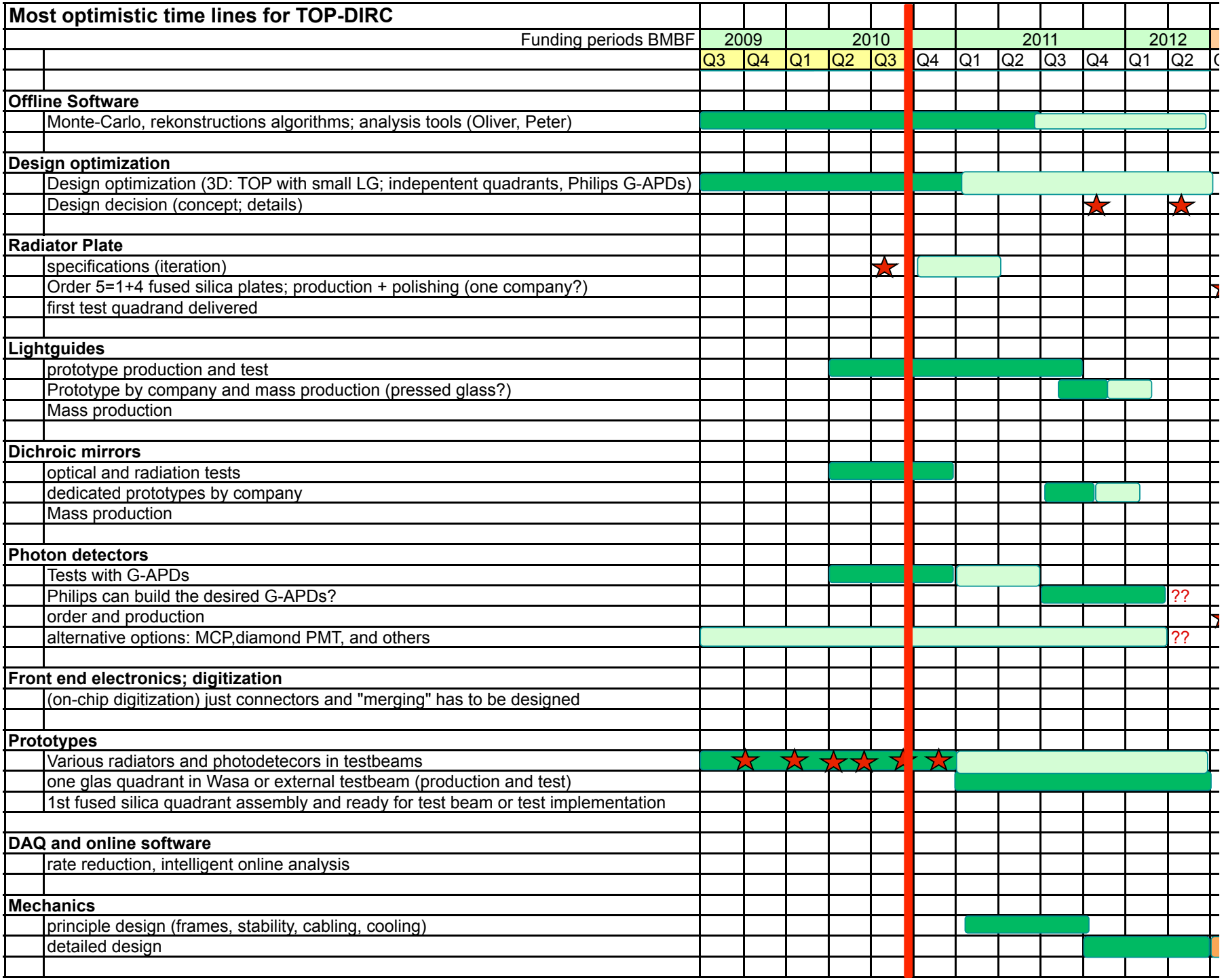
News on the DISC DIRC design

	Most pessimistic time lines															
#	Funding periods BMBF	2009		2010				2011				2012		2012	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Photon detectors														
	MCPs do to stand the light yields														
	PMTs do not stand the magnetic fields														
	Diamond PMTs do not work properly														
	G-APDs have a too high dark rate														
						TODAY									

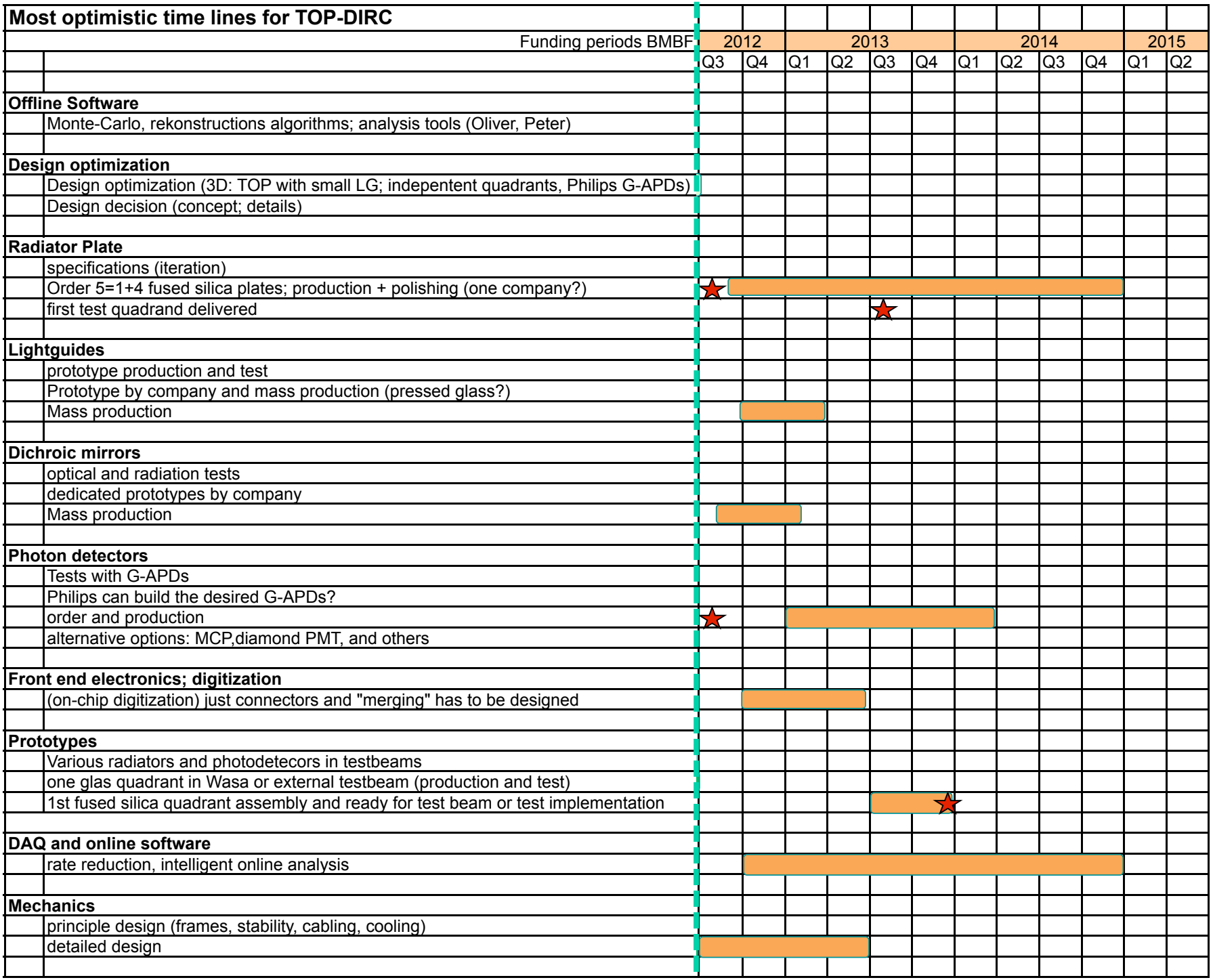
News on the DISC DIRC design



Most optimistic time lines for TOP-DIRC



Most optimistic time lines for TOP-DIRC

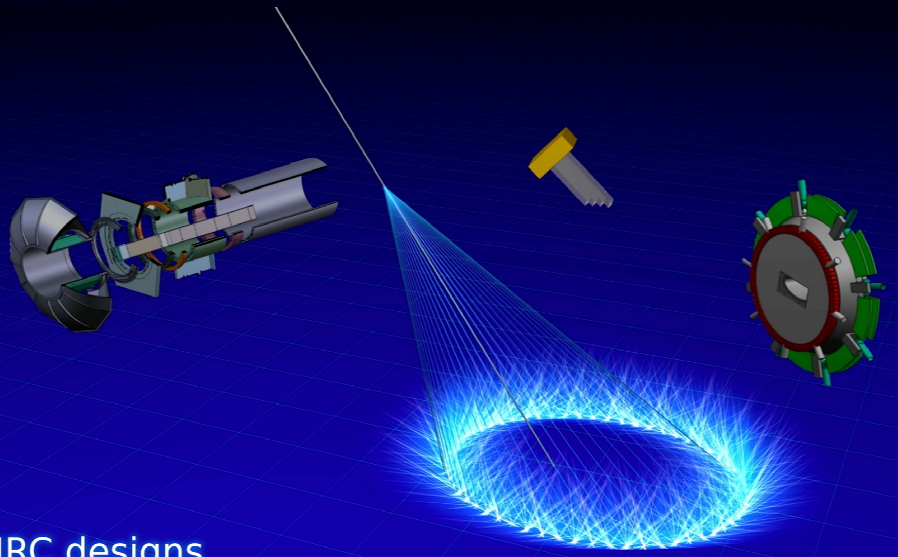


Workshop on Fast Cherenkov Detectors

Photon detection, DIRC design and DAQ

May 11-13, 2009 - Justus-Liebig-Universität Giessen

www.physik.uni-giessen.de/dueren/workshop.htm



DIRC designs
Photon detection
Frontend electronics
Data acquisition
DIRC reconstruction

European Graduate School
Complex Systems
of
Hadrons and Nuclei

HIC for FAIR

The workshop will focus on the design of fast DIRC Cherenkov detectors as they are currently being planned for the PANDA experiment at FAIR. Common issues like the fast data acquisition of arrival times and photon amplitudes make the subject interesting for other projects in PANDA and also for ATLAS, WASA and other experiments. We will try to make the workshop effective and inspiring as well for experts as for students.

JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN

Local organizers:

Anatoli Astvatsatourov, Michael Düren, Klaus Föhl, Avetik Hayrapetyan, Wolfgang Kühn, Sören Lange, Volker Metag, Rainer Novotny, Wolfgang Plaß Christof Scheidenberger, Hasko Stenzel

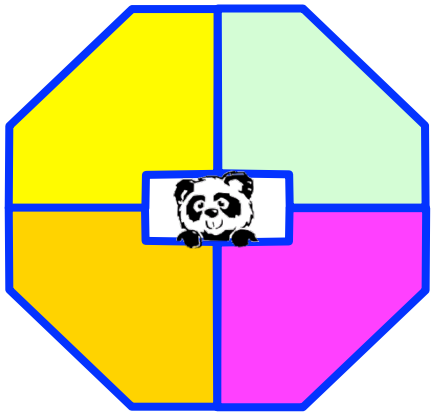
Sponsored by HIC for FAIR (Helmholtz International Center for FAIR) and DFG (European Graduate School)

DIRC2011

Workshop planned for
June 6-8, 2011
in Gießen/Rauischholzhausen

www.uni-giessen.de/cms/dueren

Proposals for invited speakers are welcome



News on the DISC DIRC design