

Plans for  
**CBM-XYTER Development**  
at DM&I AGH, Kraków

Robert Szczygieł

AGH University of Science and Technology in Kraków, Poland  
Department of Measurement and Instrumentation

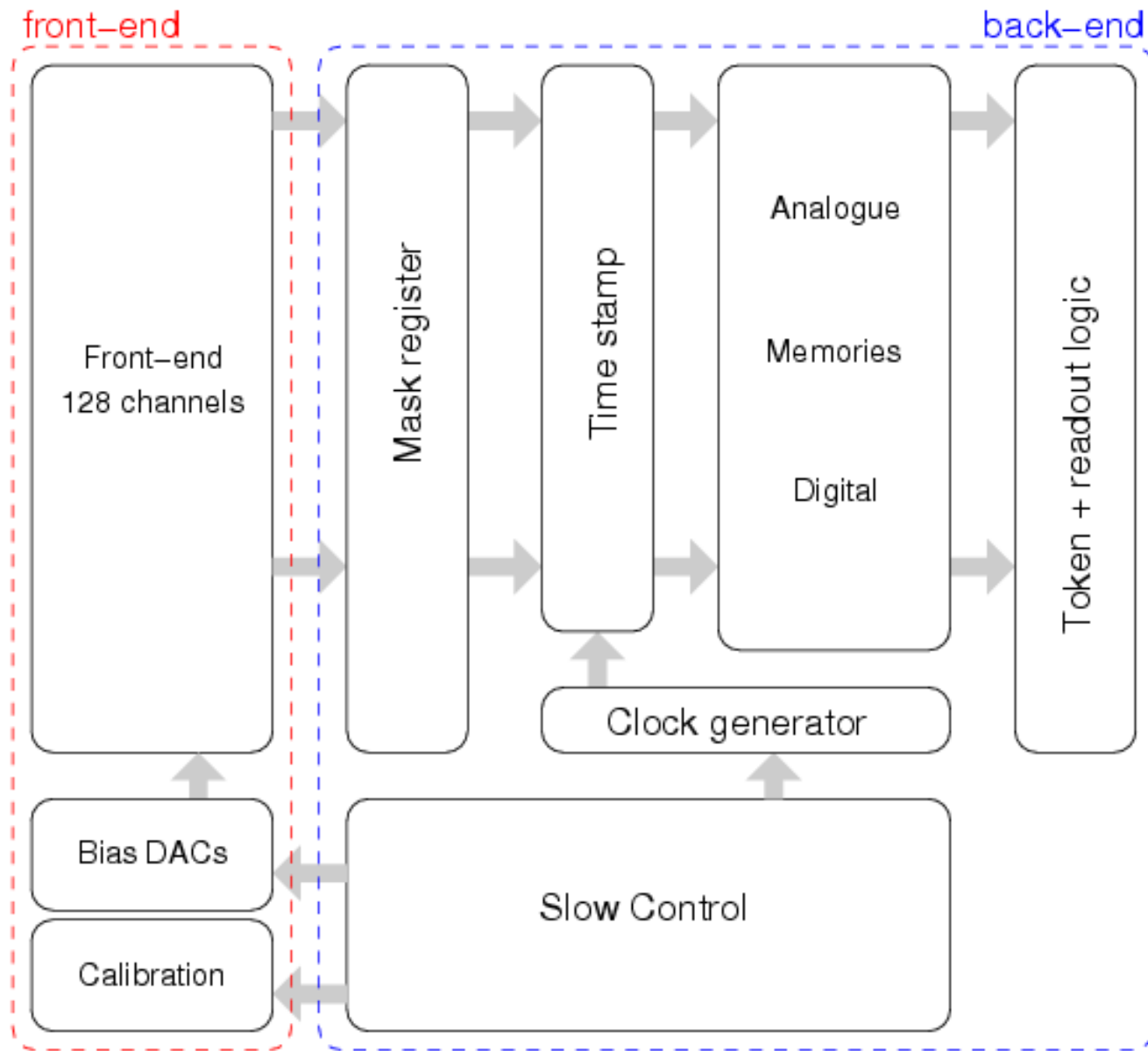
## Target sensors:

- silicon strip detectors
- other (to be defined)

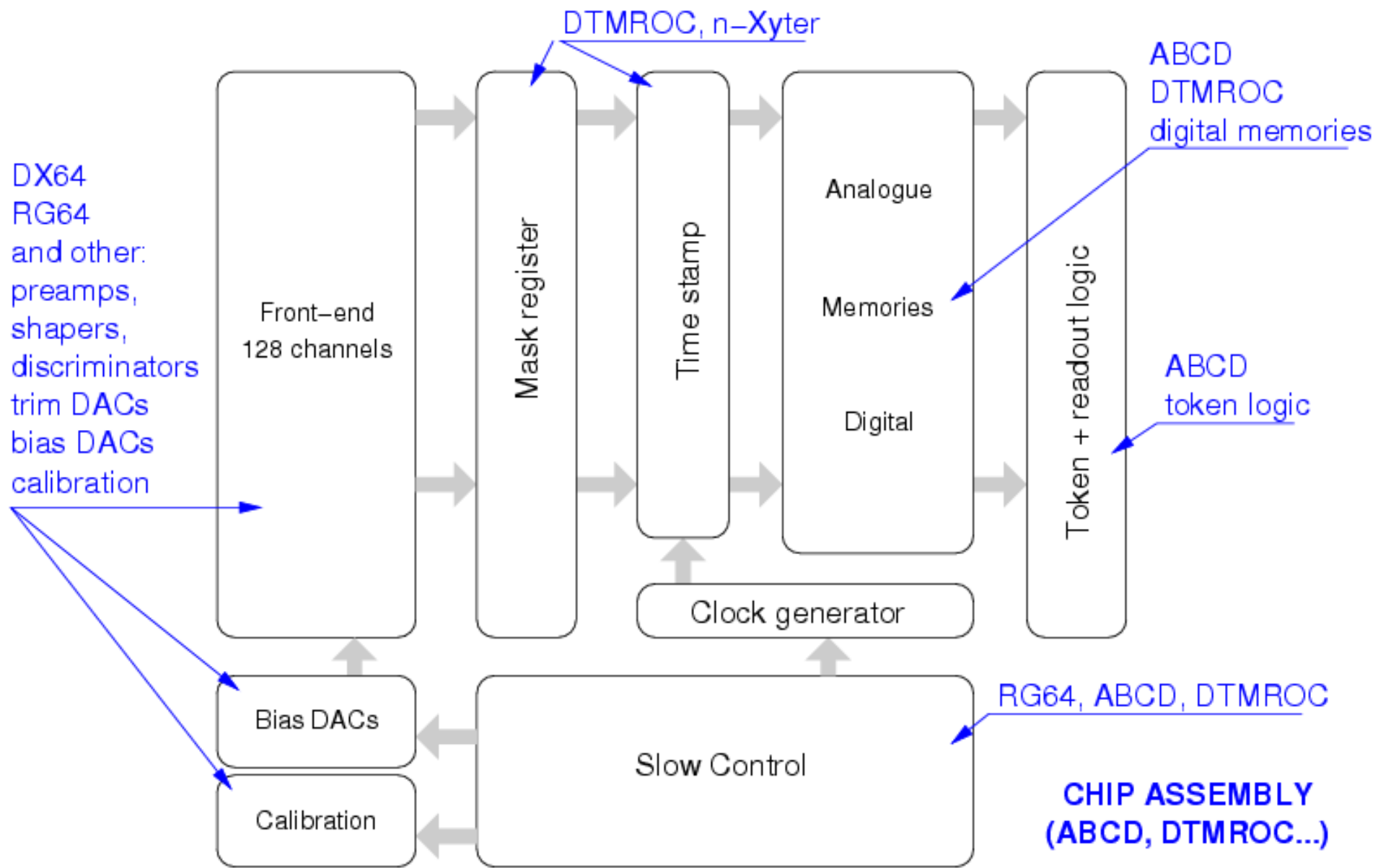
## Lesson from DETNI:

- **not possible to use the same chip for all detectors** – different requirements for noise, speed, power, geometry etc.
- possibility: **the same back-end**, can be specified independently of detector type (but: channel pitch and analogue memory still depend on front-end)
- **dedicated front-end** for given detector type

# Simplified schematic of n-Xyter ASIC



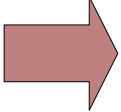
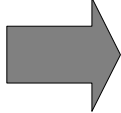
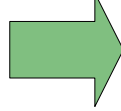
# Expertise of AGH DM&I group



## Organization

- flow of information is critical (another lesson from DETNI) - especially about block updates, bugs in the design kit and libraries
- fix: design kit version, technology, (support!)

## CBM-XYTER project phases

-  1. a) n-Xyter tests – we still can learn something
- 1. b) design kit and library preparation
- 1. c) irradiation test on 0.18  $\mu\text{m}$  technology
-  2. Prototypes of CBM-XYTER blocks
-  3. Full functionality prototypes
- 4. Production tests – do not ignore: high requirements for human resources!

## **Finance matters:**

- we expect founding either from CBM/FAIR or polish government
- we assume, that the definition of „in kind” contribution definition in FAIR will allow us to get the polish funds
- it is not 100% sure how the funds flow will be done in Poland (polish government has just introduced brand new National Research and Development Center which is supposed (?) to be a XFEL/FAIR share-holder – legal issues not clear at the moment).

# Summary

- we clearly see the possibility of our (AGH DM&I) engagement in CBM-Xyter development
- we have experience from other projects which can be very usefull for CBM-Xyter project
- now we support n-Xyter testing
- waiting for founding matters to be cleared