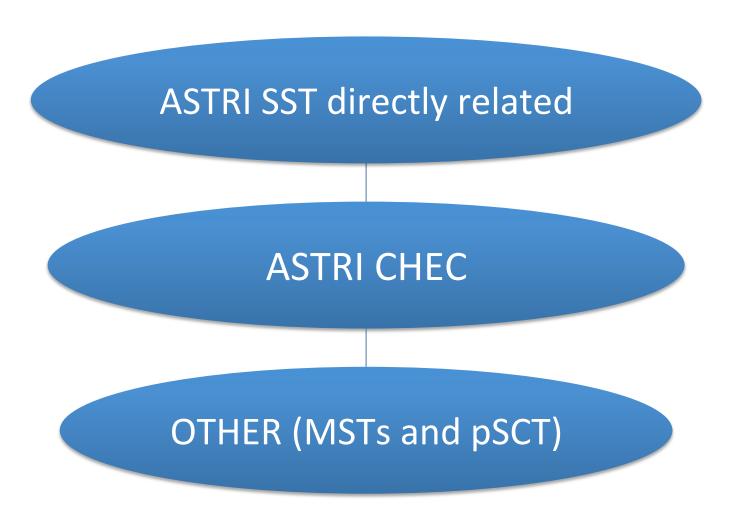


### **International Agreements ASTRI INAF in CTA**



- ✓ International cooperation makes INAF stronger in the CTA project
- ✓ Italian Government very in favor of that
- ✓ Scientific exchange with International Institutes
- ✓ Visibility will be given in public presentations
- ✓ INAF contributing authors will appear in publications concerning each Consortium
- ✓ Recognition of INAF IKC (in kind contribution) to CTAO also for these activities

R. Millul 13 October 2017



## **International Agreements directly ASTRI SST related**

**Collaboration Agreement INAF – North -West University- South Africa** 

NWU Contribution to the implementation of the ASTRI SST mini array project

1 Post doc in Italy



## **International Agreements directly ASTRI SST related**

### Collaboration Agreement INAF – Universidade de Sao Paulo Brasil-FAPESP

USP contribution -supported by FAPESP- for the participation on the construction and realization of the ASTRI SST mini array

3 USP Engineers at Serra La Nave for 2 years

Possible exchange of student at PhD level and Post doc



#### **ASTRI CHEC**

Preliminary Agreement ASTRI- CHEC (Compact High Energy Camera)

The CHEC Consortium is legally represented by MPIK, the Max Planck Institute for Nuclear Physic.

It consists of groups at UK Universities (Leicester, Durham, Liverpool, Oxford); Dutch Universities (Amsterdam and Groningen), Germany Institutes (MPIK and University of Erlangen); University of Nagoya (Japan) and the University of Adelaide (Australia)

R. Millul 13 October 2017



#### **ASTRI-CHEC**

#### **Preliminary Agreement ASTRI- CHEC**

INAF and CHEC wish to contribute to the CTA SST subsystem from the beginning of the construction of CTA-South and subsequently to the complete array of at least 50 SST telescopes.

CHEC will provide six camera based on SiPM sensors

CHEC will Inform the relevant partners and CTAO about this Agreement

INAF will provide access to facility in Sicily for members of the CHEC consortium

INAF will deploy, subject to CTAO approval, 15 ASTRI structures on the southern CTA site: 9 structures with ASTRI cameras and 6 with CHEC cameras



# Others agreements: MST's

**Letter of Intent INAF DESY (**Deutsches Elektronen-Synchrotron)

DESY coordinates the MST STR project and, in addition to the management activities, provides 2 mechanical structures and the drive system of the MSTs to CTAO

INAF provides 200 segments of mirrors of MST, (equivalent to a set of 90 mirrors for two MST telescopes each plus 20 spare mirrors) manufactured by Media Lario S.R.L. fulfilling the CTA requirements.



## Others agreements: MST's

### **Memorandum of Understanding MST Consortium**

For the realization and installation of 2 MSTs in the Southern site of CTA

**INAF** has been asked to be member of the MST Consortium (providing the mirrors for 2 MST) as part of the MST-STR subsystem.

R. Millul 13 October 2017



## Others agreements:pSCT

### **Collaboration Agreement INAF-UCLA**

MRI pSCT consortium will provide the sub-components of the pSCT M2 mirror panels

**INAF** will provide – through a contract issued by INAF to Media Lario S.R.L - the assembling of pre-formed glass foils to fabricate 20 mirror panels of S2 type and 10 mirror panels of S1 type for the M2 mirror of the pSCT and deliver them to UCLA.

The INAF effort is an in kind contribution to the pSCT MRI project in the context of the development of worldwide CTA observatory as per the costs requested for this supply by the manufacturer. By means of this contribution INAF will be considered a partner on the pSCT project equal to the other MRI consortium members.

**UCLA** will be responsible for the integration of mirror panels