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## Introduction

Following the green light for the construction of the ELT the MOS community, structured through the MOSAIC consortium, is eager to have a MOS on the ELT as soon as possible. Several of the most compelling cases for ELT science, in highly competitive areas of modern astronomy, demand such a capability. For example, MOS observations in the early stages of ELT operations will be essential for follow-up of sources identified by the James Webb Space Telescope (JWST), providing a unique method to investigate the reionisation of the Universe and the origin of the first structures.

## INSTRUMENT - Current Instrumental Concepts



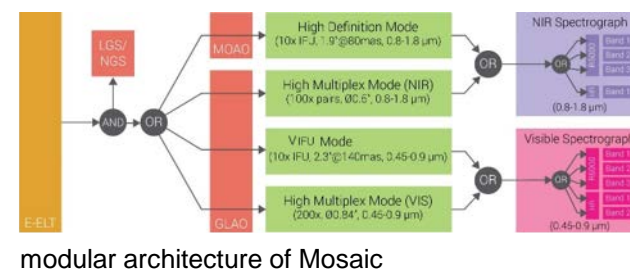
A set of Modes with corresponding Specifications

### High Definition Mode (HDM)

IFU field of view	1.9 x 1.9 arcsec
Multiplex	8 IFUs (Goal:10)
Spatial pixel size	80 mas
Ao Performance	>25% EE in 150 mas
Spectral Resolution	5000 & 15000
$\lambda$ coverage	0.8 - 1.8 $\mu$ m

### High Multiplex Mode (HMM VIS)

On Sky aperture	0.9 arcsec
Multiplex	80 (Goal: 100)
Spectral Resolution	5000 & 15000
$\lambda$ coverage	0.45 - 0.9 $\mu$ m



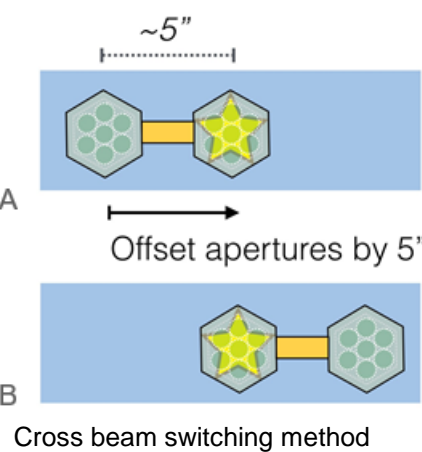
- 200 tiles, to deal with the telescope non-telecentricity, are mapping the focal plate: each of them equipped with a Pick-Off mirror (HDM & VIFU) and Pick-Off fibre modules (HMM)
- 100+100 tiles are allocated in NIR with the cross beam switching method.

### Visible Integral Field Unit (VIFU)

IFU field of view	1.9 x 1.9 arcsec
Multiplex	8 IFUs (Goal:10)
Spatial pixel size	138 mas
Spectral Resolution	5000 & 15000
$\lambda$ coverage	0.45 - 0.9 $\mu$ m

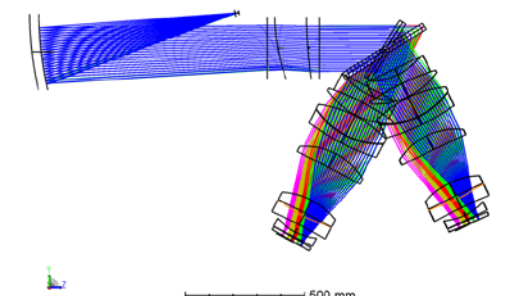
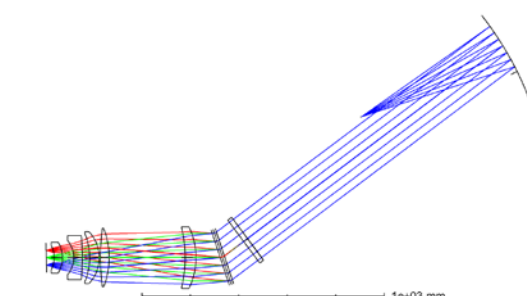
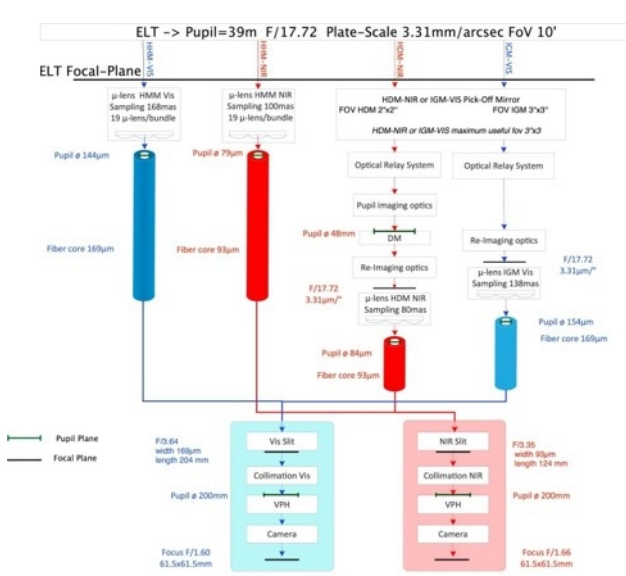
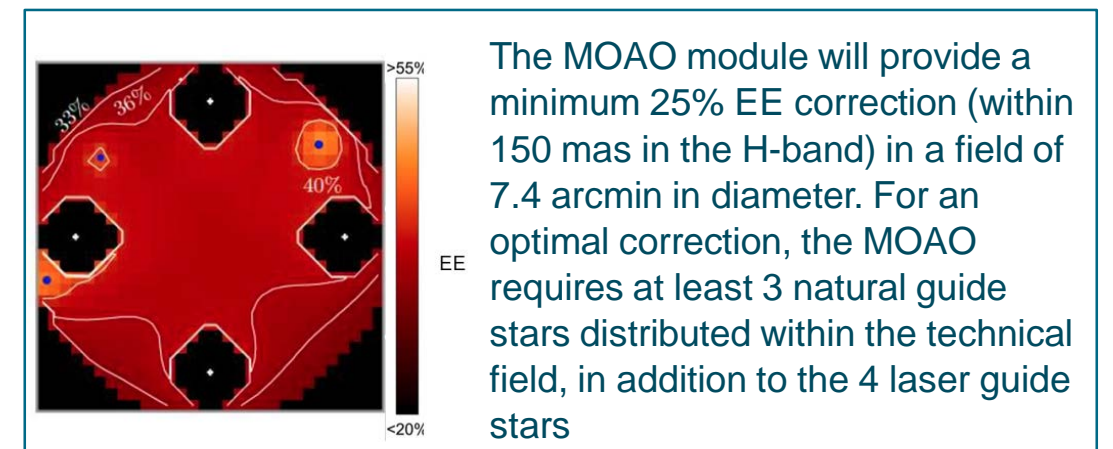
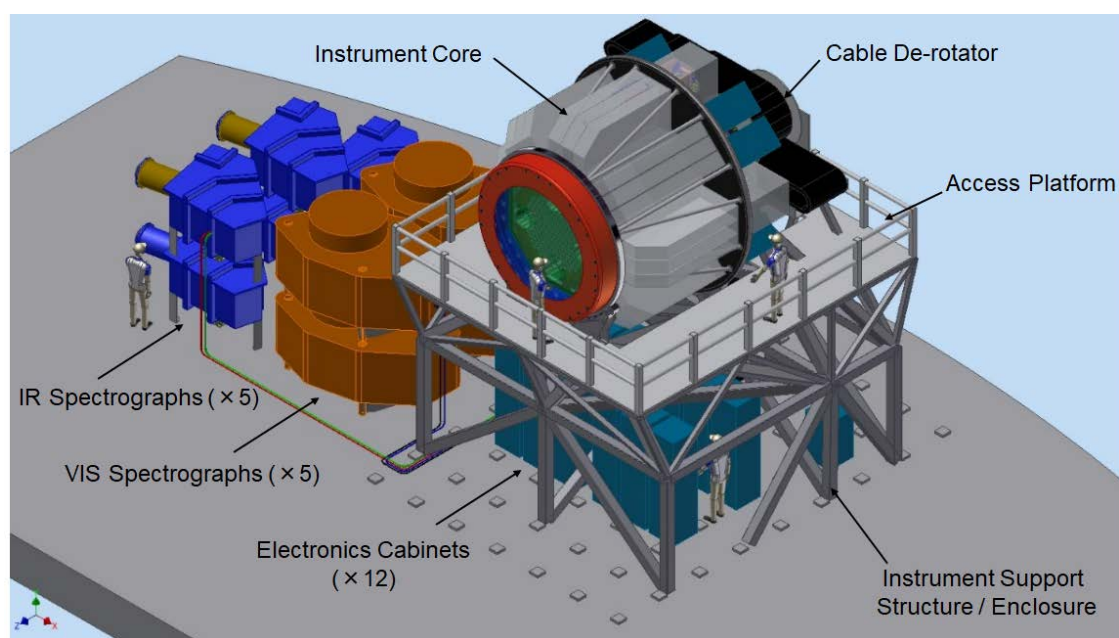
### High Multiplex Mode (HMM NIR)

On Sky aperture	0.9 arcsec
Multiplex	80 (Goal: 100)
Spectral Resolution	5000 & 15000
power	
$\lambda$ coverage	0.8 - 1.8 $\mu$ m



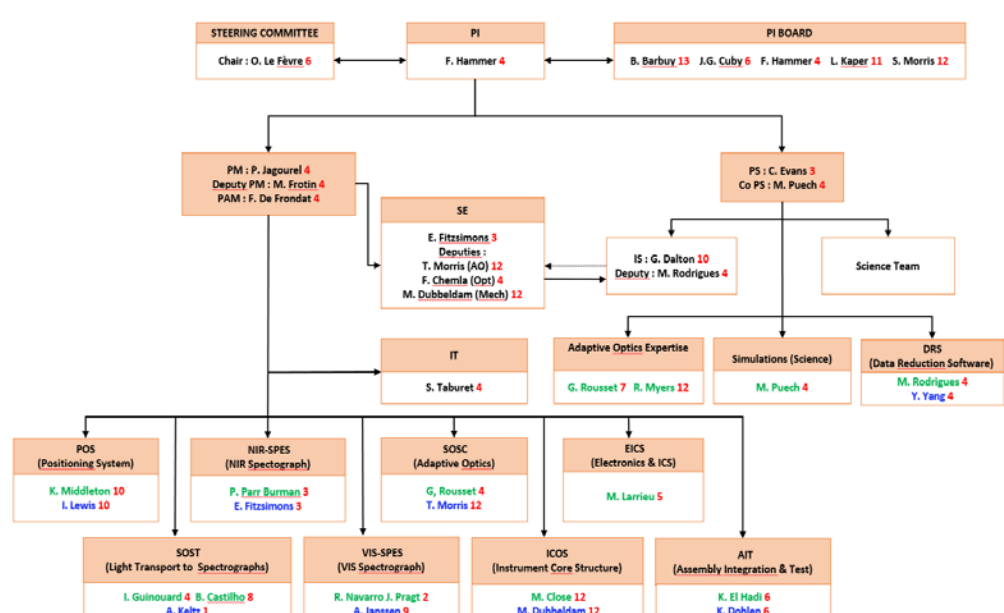
- Adaptive Optics (MOAO) Correction Modules (HDM) as well as Natural Guide star sensing devices are carried by the Focal Plate.
- Laser Guide Stars Modules are upstream of the Focal Plate.

- Visible & NIR spectrographs allow performing multiplexes in the 4 modes



## CONSORTIUM : MOSAIC PHASE B

**MOSAIC ready for the construction Phase**



WP Name, WP Manager, WP System Engineer  
 AIP Allemagne, Postdam 1, NOVA Pays-Bas, Leiden 2, ATC UK, Edinburgh 3, GEPI France, Paris 4, IRAP France, Toulouse 5, LAM France, Marseille 6, LESIA France, Meudon 7, LNA Brésil, Rio de Janeiro 8, NOVA Pays-Bas, Leiden 9, RALSPACE Oxford 10, Univ. of Amsterdam 11, Univ. of Durham 12, Univ. of Sao Paulo 13

**Experience of the Consortium:** The MOSAIC project brings together the design and analysis work done on all previous conceptual designs for a MOS for the ELT. As we see at left, the MOSAIC Consortium includes world-leaders in the design, development, and construction of astronomical instrumentation, located across Europe and Brazil, and supported as high priority by their funding agencies.

Partners within the MOSAIC consortium have a long and successful heritage of instrument delivery for ESO, including: FLAMES, KMOS, MUSE, SPHERE, NACO, VIMOS, and X-SHOOTER