PRELIMINARY ACTIVITY FOR IDENTIFICATION AND CHARACTERIZATION OF AN INTERNATIONAL CAL/VAL SITE

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Intro #1

- The scope was to select, identify and characterise test sites, to be used as a reference, for the calibration and characterisation of different sensor types and identifying and characterizing test sites that can be used for external calibration
  - ASI-PRISMA related CAL/VAL site
  - a CAL/VAL site is a direct interest of European Space Agency (ESA) in the framework of the Committee on Earth Observation Satellite (CEOS) actions

Calibration sites are never chosen randomly (Bannari et al., 2005, RD.100), and to be adequate they must satisfy a certain number of criteria, (Scott et al, 1996, RD.101, Slater et al., 1996, RD.102, Slater et al, 1987, RD.103, Teillet et al.,1997, RD.104, Clark, 2004, RD.105).

Intro #2

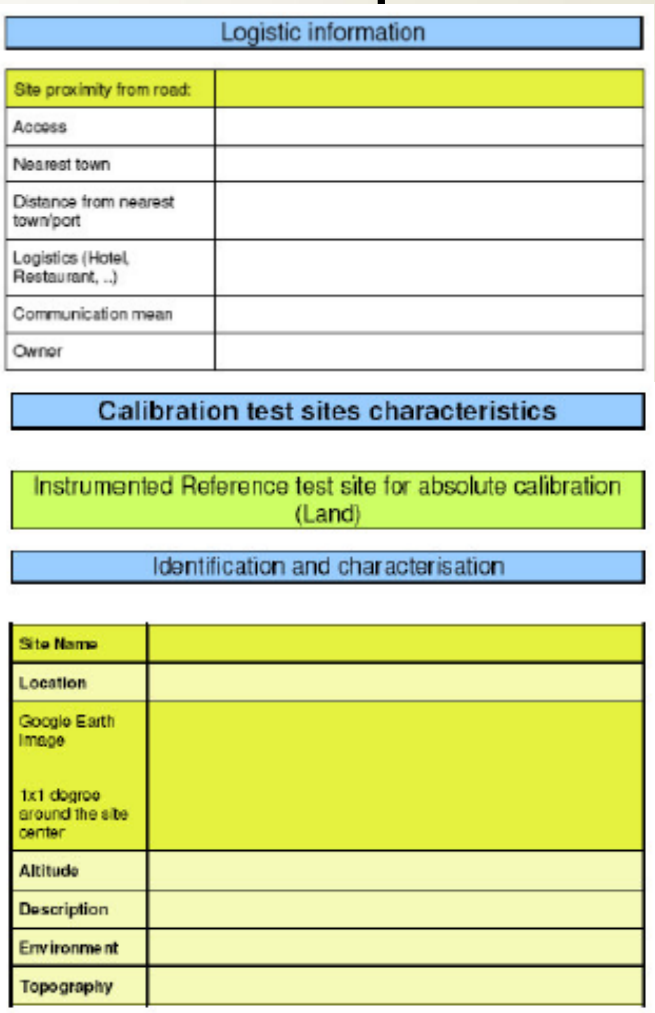
- Berthelot and Santer (2008) stated the criteria to be followed in order to verify the compliance of the chosen site with respect to the CAL/VAL needs. The level of compliance will allow the characterization of inland calibration-validation site as:
  - LES: Land Equipped Site
  - LNES: Land Non Equipped Site

Questionnaire Content Description	LES	LNSE
Site location	x	x
Logistic information	x	
Site climatology	x	x
Calibration methodology		x
Site instrumentation	x	
Measurement accuracy	x	
Site usage	x	x
Sampling strategy		x
Contact information	x	x
Data availability	x	x

- Equipped sites correspond to a test sites and are adapted for Optical sensor medium resolution and geostationary instruments. They can be used for Optical sensor high-resolution sensors as well

Questionnaire Content Description

Site location	Information concerning Surface • Altitude • Morphology
Logistic information	Information concerning the dist
Site climatology	Spatial uniformity Surface reflectance level Spectral variability Invariance of spectral and radi Magnitude of directional effec Cloud cover Aerosol, water vapor and ozon
Site instrumentation	information ranging from instrur wavelength, parameter measured, measurement accuracy and p calibration standard
Site usage	availability of historical reco acquisition.
Data availability	Owner , availability
Contact information	www. @ … instrument mai



Logistic information

Site proximity from road:	
Access	
Nearest town	
Distance from nearest town/port	
Logistics (Hotel, Restaurant, ..)	
Communication mean	
Owner	

Calibration test sites characteristics

Instrumented Reference test site for absolute calibration (Land)

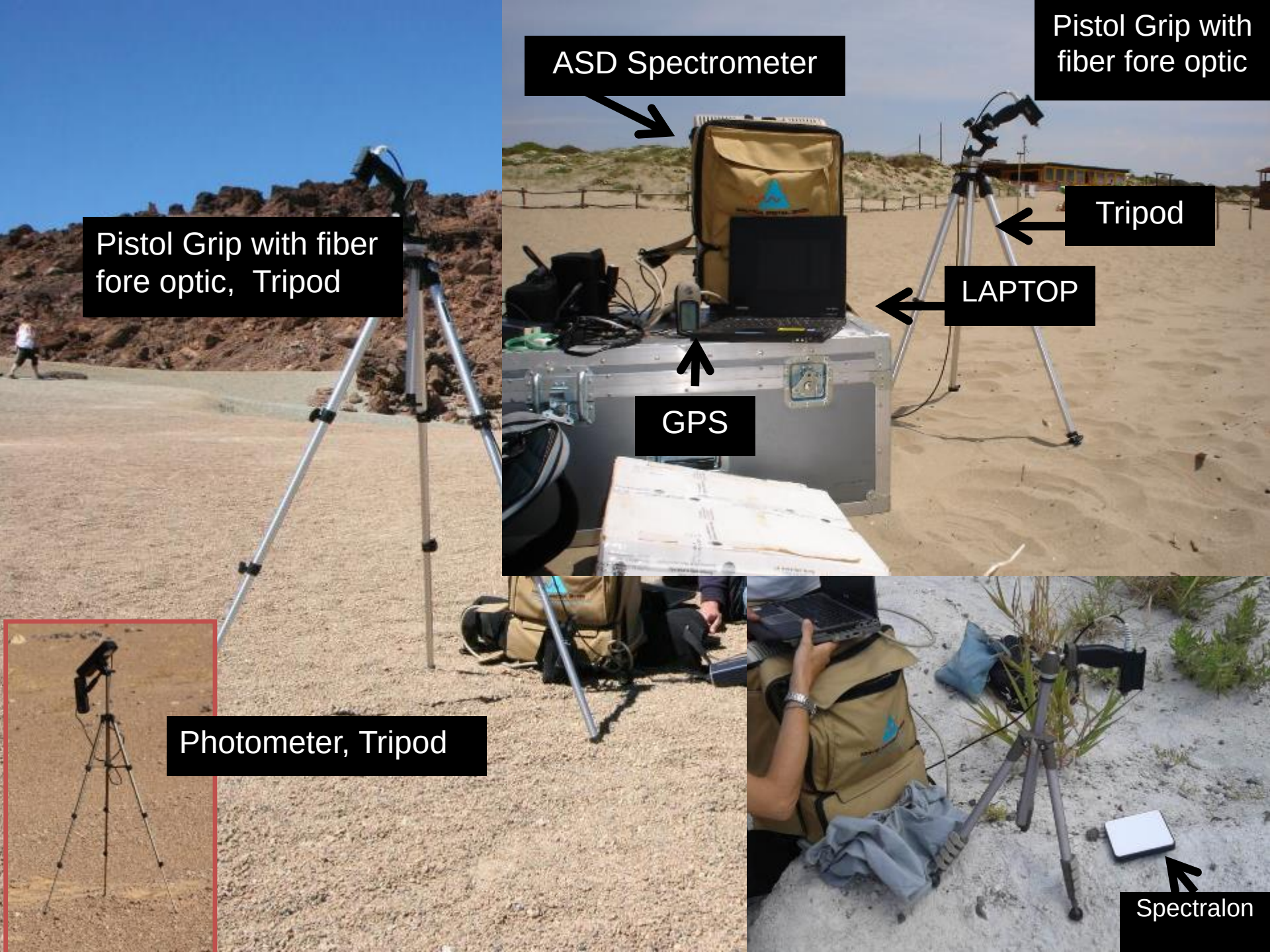
Identification and characterisation

Site Name	
Location	
Google Earth Image 1x1 degree around the site center	
Altitude	
Description	
Environment	
Topography	

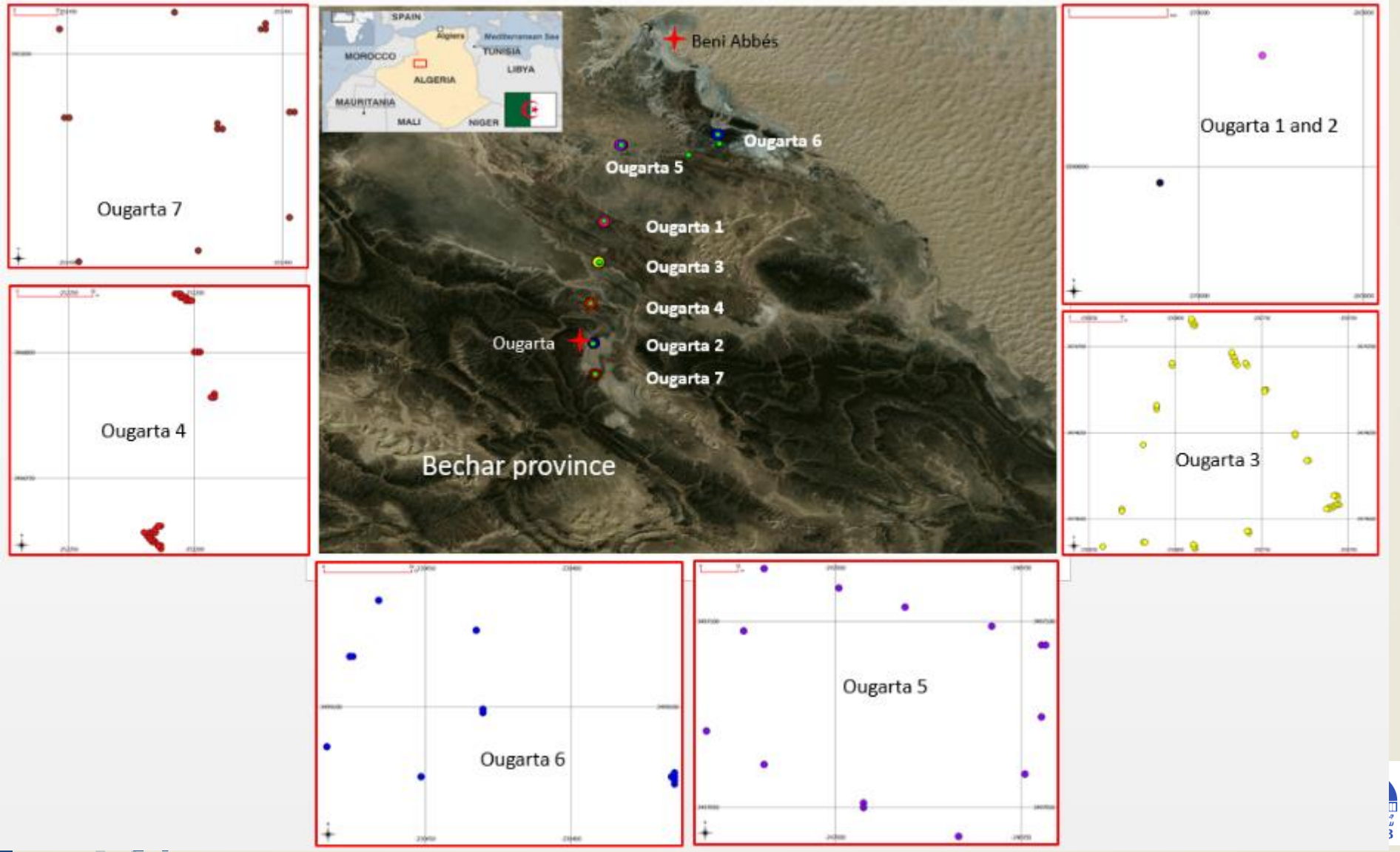
Ougarta-Beni Abbes

Logistic

- The region of Ougarta Beni Abbes is located 300 km SS-W from the town of Bechar in the western “Grand Erg and 370 km from Adrar located in the SW


Pistol Grip with fiber fore optic, Tripod
ASD Spectrometer
Pistol Grip with fiber fore optic
Tripod
LAPTOP
GPS
Photometer, Tripod
Spectralon

May 6th 11th 2014

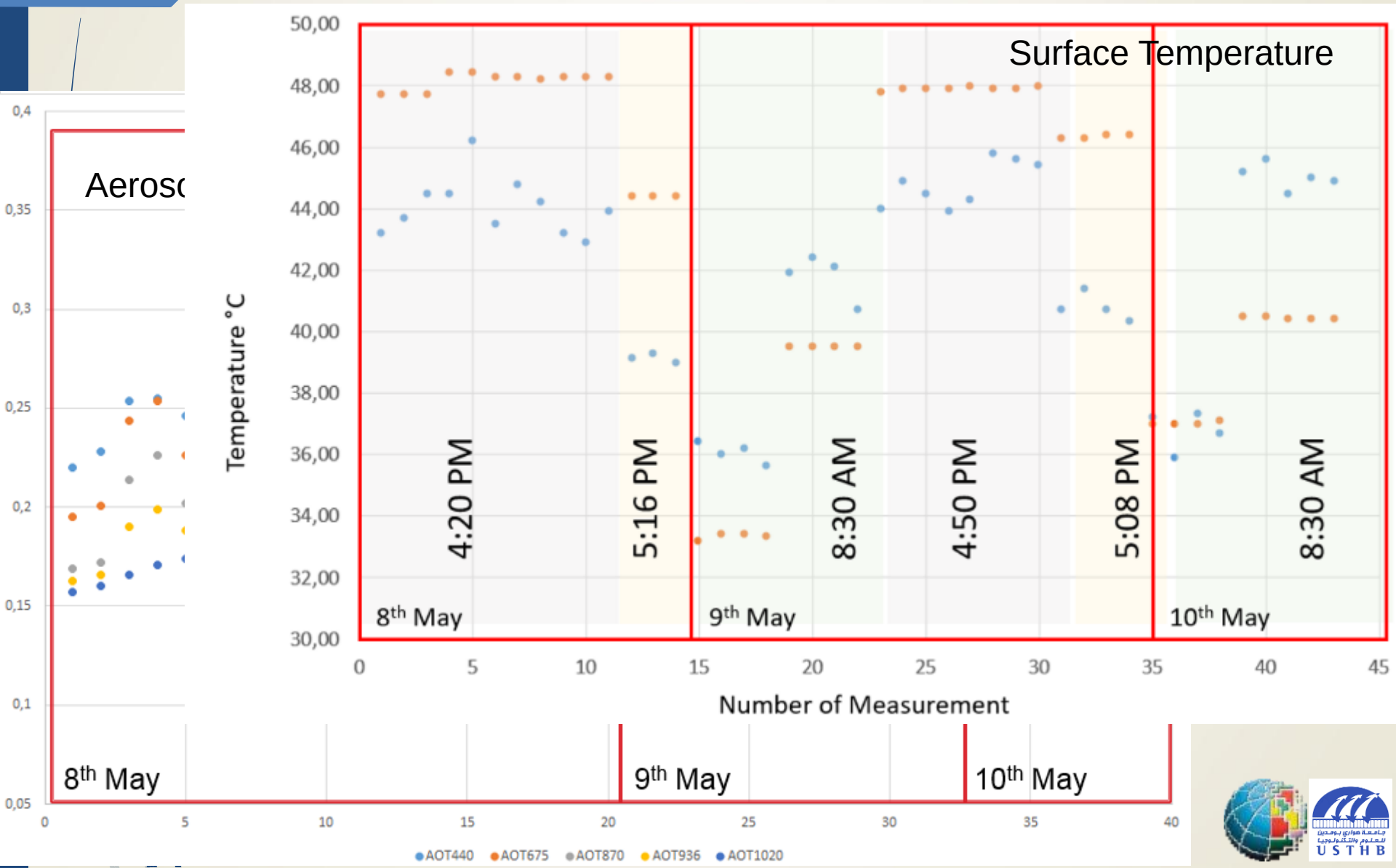


Collected data #1

Site name	Latitude	Longitude	Number of sample
Ougarta 1	29.83573 N	2.24485 W	230
Ougarta 2	29.65372 N	2.26165 W	300
Ougarta 3	29.77440 N	2.25335 W	480
Ougarta 4	29.71355 N	2.26548 W	800
Ougarta 5	29.94992 N	2.21901 W	290
Ougarta 6	29.96527 N	2.07047 W	210
Ougarta 7	29.60723 N	2.25835 W	340

Surface spectra analysis

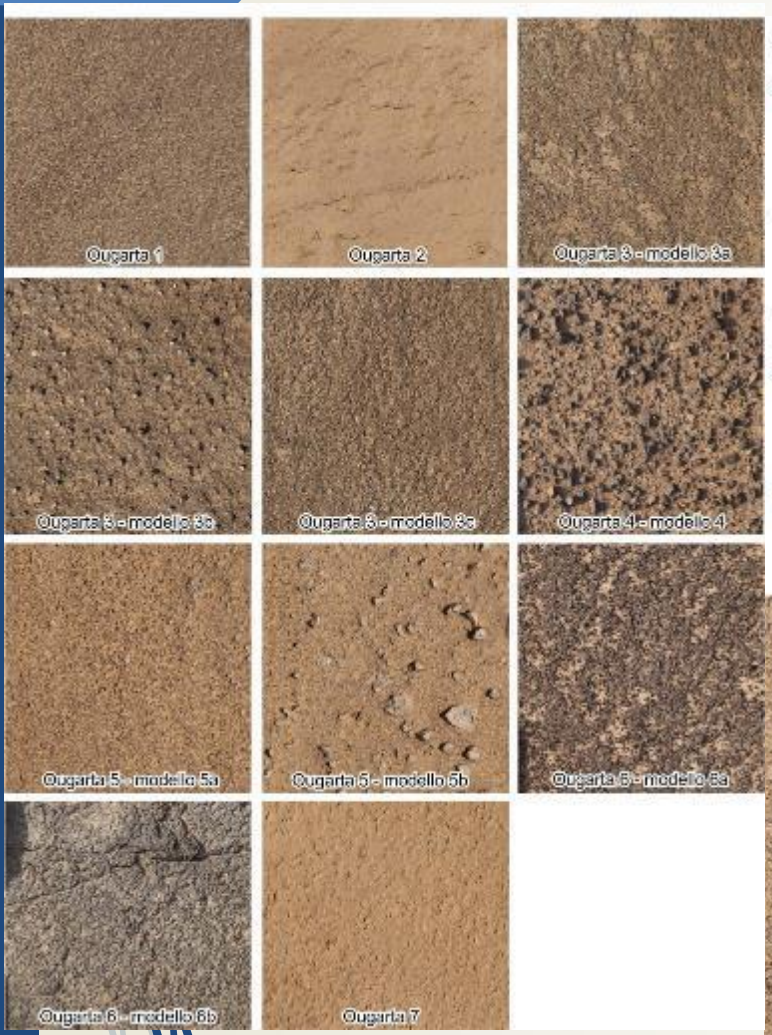
Collected data #2

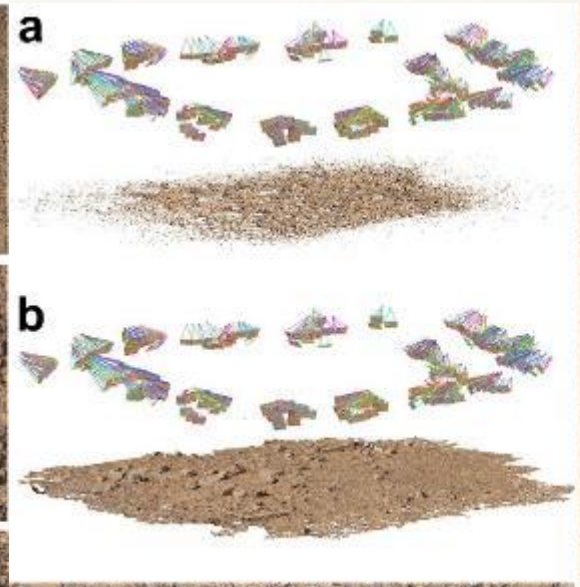


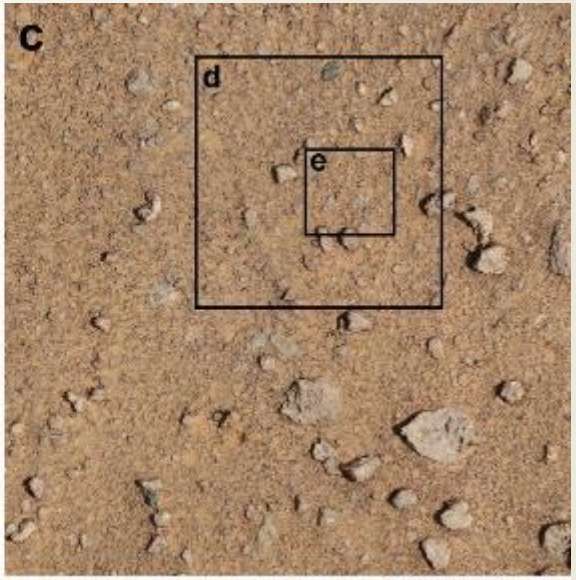
Collected data #3: Roughness

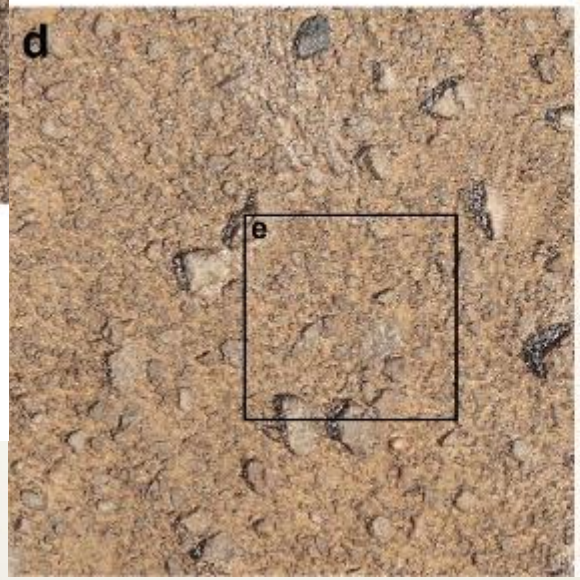
Site	Model name	Date–hour		Number of photo
		yyyy–mm–dd	hh:mm	
Ougarta 1	1	2014–05–08	7:15	392
Ougarta 2	2	2014–05–08	9:56	240
Ougarta 3	3a	2014–05–08	16:05	217
Ougarta 3	3b	2014–05–08	16:25	279
Ougarta 3	3c	2014–05–08	16:40	210
Ougarta 4	4	2014–05–08	17:08	314
Ougarta 5	5a	2014–05–09	8:17	367
Ougarta 5	5b	2014–05–09	8:44	296
Ougarta 6	6a	2014–05–09	16:49	371
Ougarta 6	6b	2014–05–09	17:03	122
Ougarta 7	7	2014–05–10	8:25	399

Roughness


Ouçarta 1
Ouçarta 2
Ouçarta 3 - modello 3a
Ouçarta 3 - modello 3c
Ouçarta 3 - modello 3c
Ouçarta 4 - modello 4
Ouçarta 5 - modello 5a
Ouçarta 5 - modello 5b
Ouçarta 5 - modello 5a
Ouçarta 6 - modello 6b
Ouçarta 7


a
b


c
d
e


d
e


e

Conclusion

Questionnaire Content Description	LES	LNSE	Ougarta Compliance
Site location	x	x	x
Logistic information	x		x
Site climatology	x	x	x
Calibration methodology		x	NA
Site instrumentation	x		x
Measurement accuracy	x		x
Site usage	x	x	x
Sampling strategy		x	x
Contact information	x	x	NA
Data availability	x	x	NA

- analyzing all the data acquired Ougarta 2, 5 and 7 areas seem to be compliant to the LES class attribution and suitable for a further characterization
- Besides geophysical and geological results also the easy access to Ougarta 7 area and the capability to set up instrumentally the area permanently make this site appropriate for the definition of CAL/VAL area suitable for both the next ASI-PRISMA mission and future space missions.

References

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