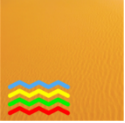# PICS characterisation

Establishing a roadmap…

Main areas of concern

- **Priority subjects to address**
    - **BRDF**
    - **Spectral characterization**
    - **Atmosphere properties**
    - **Temporal Stability**
    - **Combining multiple sites calibration results**
    - **Revisiting the sites**
    - **PICSCAR Portal**

Directional characterisation

- **Referencing existing BRDF models**
  - **CNES, ESA, VITO/Rayference (availability?), MODIS std products, MISR std products, Parasol std products, other?**
  - **How to extend the model to the full spectral range (SWIR, blue?)**
  - **Is it possible to generate a 'generic' BRDF model using MODIS or MISR std products?**

- **How to compare BRDF modelling?**
  - **Direct model comparison: what does it mean?**
  - **Efficiency of the correction: which criteria? which test dataset?**

- **Who can do that?**
  - **Need to find a prior consensus on the methodology**
  - **Task sharing?**

Spectral characterisation

- **Referencing existing studies**
  - **ESA, CNES, USD, other?**
- **Need for a reference**
  - **Based on sand samples laboratory measurements (which ones?)**
  - **Establishing a physical model based on mineralogy properties**
  - **Using a reference sensor:**
    - **which one? - very good spectral bands knowledge and accurate inter-bands calibration**
    - **multiple sensors? - accurate sensors inter-calibration**
    - **reference geometry to be defined (need for a directional normalization?)**
  - **Merging lab measurement, physics and multiple sensors fit...**
- **Who can do that?**
  - **Need to find a prior consensus on the methodology**
    - **comparison of ESA and CNES methodology?**
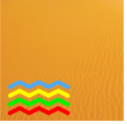 - **Task sharing?**

Atmospheric characterisation

- **Defining atmospheric correction**
  - **Need for an atmospheric correction protocol?**
  - **Which meteo data?**
    - **could be a problem for past data (ERA Interim from 1979!)**
    - **what about ozone content?**
  - **Main (unknown…) contributor: aerosols**

- **Referencing existing aerosol climatologies**
  - **CNES, ESA, VITO/Rayference (availability?), other?**
  - **Which characteristics: optical thickness, aerosol model…**
  - **How to assess the efficiency of aerosol correction?**

- **Who can do that?**
  - **Task sharing?**

Others

- **Temporal Stability**
  - **identified as the first priority at IVOS 28 meeting**
  - **Need for combining multi sensors and multi sites results**
    - **How to proceed?**

- **Combining multiple sites calibration results**
  - **How to weight the measurements?**
  - **Is it necessary to find a common agreement? And to determine a set of common sites (based on QST answers)**

- **Revisiting the sites**
  - **Making a synthesis of the studies already performed**
  - **New sites can be added in a second step**

PICS Portal revival

- **Agreement for Cal/Val portal hosting ?**
- **Defining information to be reported**
  - **General information about PICSs**
  - **Detailed information for each PICS (and how to obtain/determine them)**
  - **Best practises**
- **What else on this website?**
  - **Friendly use tools for PICS data management?**
  - **Providing PICS characteristics data (BRDF , spectral profiles, ..)**
  - **Repository for satellite data over PICS?**
  - **Repository for calibration results using PICS?**
- **What's about CNES-Magellium proposal to develop a first mock-up to be discussed in a dedicated PICSCAR webmeeting?**
- **Final goal: providing a radiance 'simulator'**