What should we calibrate/validate in SWOT ?

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What product level do we intend to validate ?

L1 ?? L2 ?? L3 / Model outputs ??

L1 is by agencies ?

L2 by the SWG/SDT ?

L3/model outputs by SWG/SDT & sc. Community ?

L2 : heights and inundated surface

Slopes ???

Cal/Val goals for heights:

Key question: Is SWOT supposed to provide « absolute » ellips heights or just variations relative to some internal reference ?

Consequence: do we limit cal/val activities to wet areas or do we also analyse the performance on dry parts of the swath ?

-> limited to repeatability on wet areas if relative heights

-> must be extended to precision on both wet and dry areas if absolute heights

Cal/Val goals for heights:

Must answer the following questions

- At what scale are the specifications achived ?
- How frequently is a target sampled
  (pb of rain and problem of detection)
  what are the consequences on the slopes

Cal/Val goals for Wet surface:

- At what scale are the specifications achieved ?
- Considering a binary goal (detected / not detected) SWG/SDT must define the detection criteria and Cal/Val will say if the criteria is ok with respect to the spec

- How frequently is a target *properly* identified (including false detection and absence of sampling)

- CAL/VaL targets must sample the variety of:

- Water bodies (narrow & large rivers, small and large Lakes, swamps, wetlands)
- Surroundings :
  - Low relief and mountain areas
  - Desert, forest
- permanence :
  - Temporary/intermitent bodies

- Target identification requires that the orbit(s) is(are) defined:

  Frequency of overfly (place of the X-overs)

  History of in-situ measurements

  past and present nadir altimetry and imagery

  Ease of access (including political stability…) for field work

  for both the 3 day and 20 day phases is a plus

Last but not least

calibration with respect to the arquives

SWOT will provide time series at the 5 year time scale.
Not enough by its own for climate studies

Being intercalibrated with nadir altimetry is mandatory

Are the arquives « as good as they should be » ?
« As good as they could be » ?

Making access to in-situ databases much more open is *dreamt*

- **L3 : Cal/Val of Q :**

  - Define the truth we shall compare SWOT-derived Q with,

  in the case of :

  - Large rivers

  - basins devoid of measurements…

  (or unpublished)

- **What is criteria for good/bad model outputs?**

  Global rms ?

  Error for extreme events ?

Open question :

- Should we include in the Cal/Val objectives the improvments that SWOT will provide on « side » subjects such as DTMs and geoid?