C. Discussion

Discussion - Training data

1. Training dataset: Is there any particular format needed?
2. (to allow reuse for further exercises) Is the AIREO format suitable?
3. Should we provide it on a (or several) particular platform(s)?

- **TDS quality assurance and metadata completeness indicators, FAIR principles**
- **Best practices and guidelines (cloud-optimized file formats, split, imbalance, versioning, metadata, quality indicators)**
- **AIREO Python Library → To help users to load an AIREO TDS and access it through common data formats used by the ML community (xarray)**

Discussion – List of artefacts

1. Are there more artefacts that could be addressed? Do you think that the proposed artefacts can be addressed?

- **The proposed list of anomalies, for the Optical S-2 case study**, is:

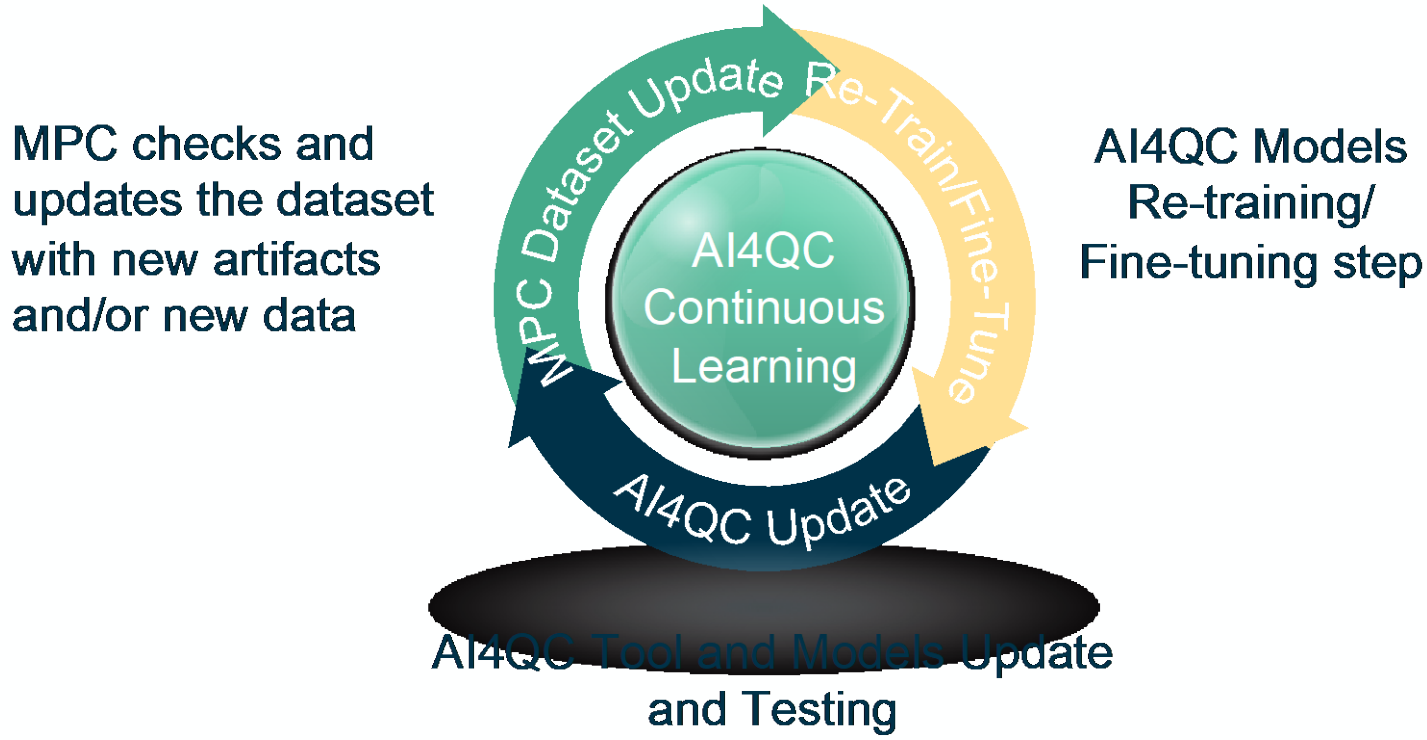
1. dropped scan line/data gaps
2. (detector) striping
3. registration issues
4. scalloping and saturated pixels
5. clouds, aerosols
6. shadows
7. aberration
8. noise effects
9. topography effects
10. aliasing
11. image artifacts
12. Geometry shifts

- **The proposed list of anomalies, for the SAR S-1 case study**, is.:

1. Range/Azimuth/Nadir ambiguity
2. Ghosting
3. Positioning errors
4. Improper antenna pattern compensation
5. Banding
6. Beams stitching
7. Atmospheric attenuation
8. Processing effects
9. Improper Foreshortening, Shadowing, Layover compensation

Discussion – AI methods

1. Which AI solution would be the best to address AI4QC tasks and goals?
2. Fine-tuning→ How often?



Discussion – Quality Reporting

1. What's the best way to deliver the AI-based data quality control report? As metadata in the products?
2. Should the AI solution be able to deliver a pixel-level report? Should it include an associated likelihood/probability? (e.g. pixel/area contains artefact A with a probability of X)

➔ VH-RODA 2022 workshop announcement

https://earth.esa.int/eogateway/events/vh-roda

Very High-resolution Radar & Optical Data Assessment workshop

7 - 10 November 2022 | ESA-ESRIN, Frascati, Italy

3rd edition: Open forum (new space, commercial and institutional) on status and developments related to the **calibration and validation** of space borne **very high-resolution SAR and optical sensors** and data products, focusing the attention on the commercial entities in Cal/Val activities, synergies between optical and SAR communities, presentation of standards and best practices for data quality.

Workshop topics (for VHR data):

- Calibration Techniques (requirements, definitions, database, methodologies)
- Calibration Sites (cross-cal/val, intercalibration, field campaigns)
- Fiducial Reference Measurements
- Analysis Ready Data, Digital Elevation Models
- Quality Control, Best Practice, Product Validation
- Processing and Algorithms (incl. Artificial Intelligence for Cal/Val)
- Cal/Val and Data quality for Constellations and Big Data
- Calibration of Future Missions (Innovative instrument concepts)