Definitions

Domino-X Earth Observation Project

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| **Full name** | **Description/Definition** |
| Advanced product | Monomission upper level product (L3, L4, L5, mosaic...) or multimission product (mosaic, multimission stereo…). |
| Area Of Interest | Area Of Interest is an area on Earth surface. |
| Context Data | Data mainly obtained from internet, used by IA for Decision Service, e.g. reprogramming. |
| Delivery request (delR) | Request for the delivery to the End User who requested the data. |
| Event follow up request (eventFR) | Detection request on data produced as part of the embedded User Request. |
| Enhanced product | Classical EO product for which additional data (data == mask / metadata / report...) are added: clouds, change detection (if stored in a EO product), detected items. |
| External system | A third party spatial imagery system to which Domino-x can send acquisitions requests and/or catalogue requests, production and or delivery requests. A product generated by this external system can be used as those of the sovereign systems to generate the final products |
| Global feasibility | For sovereign systems, the Coverage Global Feasibility corresponds to an estimation of a Programming Request satisfaction along the validity period, that takes into account the workload (order book) of a system. It relies on a sophisticated modelisation of the system behaviour performed at FS level, and taking into account statistical weather forecasts. For an external system, the Global Feasibility corresponds to a synthesis of the Intrinsic Feasibility results. The coverage progress inside the validity period is measured as if every accessible mesh was successfully planned along the time. |
| Ground Station | System capable of establishing a telecommunication and exchanging data between spacecrafts and ground. It usually comprises antennas, digitizers and modems. Two types of ground stations: - TMTC ground station: Sending TC request and receiving TM (CADU). - ITM ground station: Scope goes until CADU delivery to an exchange point. |
| House Keeping Telemetry | Sanitary data of the satellite. |
| Image Auxiliary Data | Ground additional data used for processing or ground segment usage e.g. GIPPs/DEM/IERS/ECMWF/CAMS/GRI |
| Image Processing Facility | Unitary algorithmic image processing software |
| Internal exchange product format (pivot format) | Format used internally between dominoes when exchanging products. |
| Intrinsic feasibility | It corresponds to an analysis performed unitary for one Programming Request, ie not taking into account the workload (order book) of a system. For an external system, it relies on an internal and generic modelisation of the system behaviour performed at FS level. For a sovereign system, it relies on the Analyse function directly provided by the sovereign system.  The intrinsic feasibility computes the geographical area meshing and the theoretical accesses to the meshes inside the Programming Request validity period. |
| IQ Data & IQ Result |  |
| L0 product | Raw image data (compressed or uncompressed depending on the mission). Usually include first level (lighter) quicklooks as for other levels. |
| L1 product | A level 1 product is obtained after radiometric correction. The computation is performed from the level 0 data. This processing level includes: • Accurate dating, scene extraction and missing line interpolation / flagging; • Offset and gains correction using calibration files which can be deactivated; • MTF enhancement (adaptive restoration) which can be deactivated; • Pixel radiometric value rounding. |
| L2 product | A L2 product is a restored sensor product is obtained after radiometric correction and geometric resampling onto a virtual perfect sensor grid. The images are registered and all the internal geometric distortions and attitudes are corrected. This processing level includes: • L1 processing except rounding; • Focal plane rearrangement (sub-swaths merging and sensor deformations); • Satellite orbit and attitude partial correction; • MTF enhancement (adaptive restoration) which can be deactivated; • Resampling in the virtual perfect acquisition grid geometry; • Pixel radiometric value rounding (16 bits); • RPC (Rational Polynomial Coefficients) generation; |
| Mission Auxiliary Data | Ground additional data used for Mission Planning  e.g. TLE, collision data, weather… |
| Multi-mission programming request | A multi-mission programming  request is declined into N Programming Requests when sent to the corresponding systems. |
| On-demand production | Product generation triggered by dedicated request.  Contingency reprocessing or enhanced, advanced production. |
| OAPIProc | The OGC API – Processes (OAPIProc) builds upon the OGC Web Processing Service (WPS) 2.0 standard and can be used to transform geospatial data into geospatial information using current Web standards. |
| Periodic programming request | Sub category of Programming Request. A periodic Programming request is defined by two additionnal parameters wrt to "standard" Programming Requests: - Periodicity period (mean time between two acquisitions); - Periodicity delay (minimum time between two acquisitions). Sometime named Recurring Programming Request. |
| Plan | It is the work plan of a satellite for a certain period of time. |
| Primary product (pivot product) | Minimum product level considered as the ground for more specific unified processings (AI, advanced product as mosaics). It's L2 product. Out of the DPS, this product can be adapted for specific need. |
| Production context | Object that contains the current state of processing workspaces in progress with all its temporary files, the execution orders, and the intermediate traces og each algorithms called by the internal orchestration. |
| Production request | User request for the production of data non foreseen as part of systematic production (on top of pivot product). |
| Programming request | Set of acquisition requests possibly on a recurring basis (esp. for site monitoring) with typically the following parameters: -Geographical area + acquisition orientation (vs north direction) -(Periodic flag +) periodicity (revisit periods from validity begin date) + min offset between 2 acquisitions -Priority -Mono-pass flag -Nebulosity threshold -GSD range (among system list of possible ranges): used for system selection/filtering -List of authorized providers -Spectral mode or optical/SAR sensor -Expert mode     - Angular constraints (GSD numerical value, on ground incidence, satellite view angles, solar incidence…)     - Split advanced parameters |
| Satellite Anciliary Data | Navigation Data and other data, produced on-board and used by DPS. Some are stored inside products for futher needs. |
| Sovereign System | Satellites and associated ground segment owned and mainly operated by the Customer. |
| STAC specification | STAC specification is a standardized way to expose collections of spatial temporal data. |
| Systematic production | Production, for sovereign satellites data, under the responsibility of DPS, triggered by CADU delivery by Ground Station, until pivot level in Internal Exchange Product Format. |
| TeleCommand | TeleCommand built by SCC, received by Ground Station, sent by Band-S antenna and executed on-board by satellite. |
| Thematics | Thematics gathers Points-of-Interest and Events which enrich products (metadata and images). |
| TM/TC and ITM contacts | Slots of communication defined between the satellite and a station to :   * Upload TC from the ground to the satellite * Download TM from the satellite to the ground * Download Imagery TM from the satellite to the ground   A contact is defined at least by its start and end times, satellite, station, service (downlink/uplink) and frequency band to use. |
| Two-Line Elements | A two-line element set (TLE) is a data format encoding a list of orbital elements of an Earth-orbiting object for a given point in time, the epoch. |
| User request | A User Request can be :   * An Event follow-up Request (eventFR) * A  Product Request  (composed of progRs, prodRs, delRs) * An Integrity Check Request  (intR)   Note : a Product Request is composed of :   * zero or N Programming Request (progR) * zero or N Production Request (prodR) * zero or N Delivery Request  (delR) |
| Workload (Order book) | The workload (or order book) of a system represents the Programming Requests that a system registered (activated) into it. |