Modification of block SATELLITE/ID

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Idea for Modified Definition:

- Add satellite-specific weights
- Define Satellite Numbers properly (SVN, PRN, COSPAR, etc.)
- Applicable for all satellite techniques (GNSS, SLR, DORIS)

Actual Definition in SINEX 2.02:

4-char satellite code (1-char "GNSS"-Code + 3-digit SVN number):

- ➔ Description should be changed form "GNSS code" to a more general name; e.g. "Character of SP3c naming"
- ➔ SVN is okay
- ➔ Identical name as it is used in "Site Code" for satellite-related parameters

2-char PRN or slot number:

- ➔ Is this really necessary? Satellite is unambiguously identified by SVN and COSPAR number
- ➔ Defined as PRN/Slot for GPS/GLONASS, but what to put for other satellites?

9-char COSPAR number:

- ➔ Should be kept as it is a unique number

1-char observation technique code:

- ➔ Satellite observed by two techniques must have two lines in SINEX (one line per technique): might be reasonable due to different weighting

12-char Start and End Time of satellite data used:

- ➔ Should be kept as it is

20-char antenna name:

- ➔ rcvr_ant.tab for GNSS (as it is in the format description now)
- ➔ What to use for the other satellite techniques?
- ➔ What to use for SLR reflectors at GNSS satellites?

=> altogether 67 characters are already used
=> 12 characters are left

Examples:
(Records that are not yet clearly defined are marked in bold red.)

```
*_SVN PR _COSPAR__ T YY:DDD:SSSSS YY:DDD:SSSSS ____ANTENNA_TYPE____ xxxxxxxxxxxx
 G036 06 1994-016A P 94:069:00000 00:000:00000 BLOCK IIA
 G036 06 1994-016A L 94:069:00000 00:000:00000 ILRS GPS-36
*
 R801 04 2011-009A P 11:121:00000 00:000:00000 GLONASS-K1
 R801 04 2011-009A L 11:121:00000 00:000:00000 ILRS GLONASS-125
```

```
*
 L051 51 1976-039A L 92:001:00000 00:000:00000 ILRS LAGEOS-1
*
 L027 27 2008-032A D 09:001:00000 00:000:00000 IDS JASON-2
 L027 27 2008-032A S 09:001:00000 00:000:00000 ILRS JASON-2
```

Proposed Extensions / Changes for new SINEX Version

1.) Add Satellite-specific weights:
- Question: Do we want to have weights or sigmas?
- additional column after "Antenna Type"
- Format: F6.4 (other suggestions?)

2.) The block should be mandatory for SINEX files of all satellite-techniques.

3.) Define Column "Antenna Type" for SLR and DORIS:

a) SLR tracking
- I suggest to put there the official ILRS name (http://ilrs.gsfc.nasa.gov/satellite_missions/list_of_satellites/index.html) of the satellite preceded by the label "ILRS"
- Other opinions?

b) DORIS tracking
- Similar to SLR and in accordance with the suggestions made earlier by Laurent and Giulhem this would be "IDS" followed by the official satellite name used within IDS (Is there an official list of satellite names available?)
- Other suggestions by the DORIS colleagues?

Open Questions

1.) Should the satellite numbers be revised (columns 1-3)? Do we need the second column?

My suggestion would be:
- Keep the first column as it is, because it is the same naming as it is defined for the "Site Code" in case of satellite-related parameters.
- Either remove the second column or define it as "SP3c satellite name (numerical part)" so that it is clear for non-GNSS satellites as well. Keeping the second column has the advantage that the users might be more used to this number than to the SVN (in case of GNSS).
- The third column with the COSPAR number should be kept, as it is a unique number and applicable for all satellites.

2.) Where to put cut-off angle and attitude as listed by Laurent and Guilhem?

I would suggest to put both in the modeling block.
If the same angle is used for all satellites, there could be only the Keyword for the cut-off angle followed by the value used, e.g.

```
 CUTOFF    10
```

And satellite-specific cut-off angles could be specified with a satellite name after the value itself, e.g. for your example:

```
CUTOFF    10   SPOT-4
CUTOFF    12   ENVISAT
CUTOFF    15   JASON-2
```

Similar for the Attitude model of the satellite:

```
ATTITUDE    GEOCENTRIC   SPOT-4
ATTITUDE    GEOCENTRIC   ENVISAT
ATTITUDE    NOMINAL      JASON-2
```