1 NowPAL System output format

This document briefly describes the output format of the NowPAL system.

NowPAL system generates two XML files:
- the <TAB> file
- the <FAB> file, generated only when a threshold is reached, it is used internally to send alert via SMS and/or email.

1.1 Descripion of XML structure

Example of XML structure:

```
<METEOSWISS>
     <ALERT client="xyz" accu="accu_cccc">
           <HEADER>
               <time>160540930</time>
               [..]
          </HEADER>
          <DATA>
               <Region ID="Region_nnn">
                         <alert_level>3</alert_level>
                         [..]
               </Region>
           </DATA>
     </ALERT>
</METEOSWISS>

xyz       : client identification name
accu_cccc : string specifying the accumulation type
Region_nnn: Definition of the region of interest
```

For each region and different accumulation period a section “<ALERT>” is added to the XML file.
The XML record for the subsection <HEADER> and <DATA> are listed in the following tables.

1.2 Section <HEADER>

Information about generation time, product used for the accumulation (past and forecast products), description of the checks and threshold for the alerts.

Parameter	Meaning
time	Identifies: year, day of the year and time of the input file. The information is reported in the following format: **<yy><ddd><hhmm>**

	<yy> = two last digits of the year <ddd> = day of the year, from 1 to 365 (366) <hhmm> = time of input volume creation (**UTC** time)
seconds	Current time in seconds (unix epoch time, from 1.1.1970)
past_minutes	Past accumulation period (in minutes)
forecast_minutes	Forecast accumulation periods (in minutes)
past_prd	Past rainfall product name
past_prd_time	Past product time in **<yy><ddd><hhmm>** format
forecast_prd	Forecast rainfall product name
forecast_prd_time	Forecast product time in **<yy><ddd><hhmm>** format
forecast_produced_time	Forecast product generated at **<yy><ddd><hhmm>** format
update_time	Frequency of updates in minutes
latency_time	Latency time, in minutes (for <FAB> files)
test_statistic	Test statistic to be evaluated for issuing alerts - mean - median - Q*km (quantile in sq.km) - Q* (normal quantiles).
test_thresholds	Thresholds to use for alerts
preprocessed	Rainfall preprocessing function to be used in the computation of the test statistics

Table 1: <HEADER> section

1.3 Section <DATA>

Results of the checks. It may be possible that other records appears in this section, which are for meteoswiss internal purpose only.

Parameter	Meaning
alert_level	Alert level: it can be 0 to number of <thresholds>
latest_fab_level	Latest <FAB> alert level
latest_fab_time	Latest <FAB> time in **<yy><ddd><hhmm>** format
latest_fab_secs	Latest <FAB> time (unix epoch time, from 1.1.1970))
previous_fab_level	Previous <FAB> alert level
previous_fab_time	Previous <FAB> time in **<yy><ddd><hhmm>** format
test_stat	Statistics testing parameter name
max_rain	MAX precipitation over 1km x 1km (before preprocessing)
mean_rain	Average precipitation over the region
perc_past_R	Average past rainfall value percentage over total rainfall
plausibility_reg_rain	0 not precipitation (artefacts in picture), 1 precipitation

Table 2: <DATA> section