

MICROStep-MIS (mail from Kamil Portunaj 10/12/2020 12:08)

In IMS CLDB each value is represented by one row in database table. There are additional columns to describe the value and its QC flags

SOURCE - the information about the value data set and its origin - e.g. 'O' - observation (automatic/manual) 'S' - SYNOP etc.

STATUS - each value can have up to 4 different statuses:

1. U - unchecked - means no QC was done yet
2. C - processed and correct, can be used for further derived data calculation, it is displayed in reports etc.
3. I - invalid - there was a QC rule that failed for this value
4. B - blocked - this is ignored value - e.g. when station or sensor is wrong or under maintenance

ERRRULEID - this is just an ID of QC setting that failed for the particular value (see explanation below)

OPTIONS - additional information about the value state

USERID - id of user who entered/changed the value, if 0 it is inserted by automatic process

MESSAGEID - id of data message from which the value was received, if 0 the messages is not saved

So the complete status of value is combination of above columns. Basically whatever is with status='C' is qualified to outputs. anything with status='C' and errruleid <> 0 should be reviewed and anything with other status is not used for outputs.

value of dry temperature (varid=7) - status C with no errors, userid=0 means it was imported automatically without user interaction

Source	Stationed	Varid	meastime	value	status	Userid	errruleid	Options	messageid
0	270	7	2019-04-21 18:00	30.5	C	0	0		0

value of dew point temperature (varid=8) - status C with no errors, generated using calculation in database options=GEN

Source	Stationed	Varid	meastime	value	status	Userid	errruleid	Options	messageid
0	270	8	2019-04-21 18:00	17.53	C	0	0	GEN	0

value of visibility (varid=63) - status C with no errors, entered MANually to database by user with id=23

Source	Stationed	Varid	meastime	value	status	Userid	errruleid	Options	messageid
0	270	63	2019-04-21 18:00	4000	C	23	0	MAN	0

suppose that we have QC with id=16 that says for this station if temperature is over 35 it gives warning, the result in database would be like below

value of temperature (varid=7) - status C but with errruleid=16 - means that there is warning about this value

Source	Stationed	Varid	meastime	value	status	Userid	errruleid	Options	messageid
0	270	7	2019-04-22 16:00	35.9	C	0	16		0

suppose that we have QC with 15 that says for this stations if temperature is over 40 it is incorrect, the result in database would be like below

value of temperature (varid=7) - status I with errruleid=15 - means that there is warning about this value

Source	Stationed	Varid	meastime	value	status	Userid	errruleid	Options	messageid
0	270	7	2019-04-22 16:00	40.2		0	15		0

The user might decide that above value is correct, even tough the QC result. so he would use the data editor and change the value like below. it means that the user has forced the database to use this value (options='FOR') and QC will not affect this value anymore

Source	Stationed	Varid	meastime	value	status	Userid	errruleid	Options	messageid
0	270	7	2019-04-23 14:00	40.2	C	23	0	FOR	0

All of the combinations above is visualized with different colors in data entry application, so the user can easily see the state of value - if it is correct, suspicious, or invalid, generated, entered manually etc...

Beside that, every change in the value is stored in the history table, so in data editor when user hovers the mouse over the value it displays historical changes with date/time of change and user name who changed the value.