The EUMETSAT Network of Satellite Application Facilities — H SAF Support to Operational Hydrology and Water Management	**H-SAF CASE STUDY**		
Product Name	**H10 – SN-OBS-01**	**Validation Institute**	**NIMH-BAS**
Case Study Period	**13-03-2010**	**Case Study Geographical Area**	**Bulgaria**

METEREOLOGICAL EVENT DESCRIPTION

The area investigated in this case study covers the North West part of Bulgaria. The study is performed for March 13, 2010.

DATA/PRODUCTS USED

The PR-OBS-10 product (snow recognition) is shown in Figure 26 and the same area from MSG 9 – RGB-Day-Snow-Fog in Figure 27.

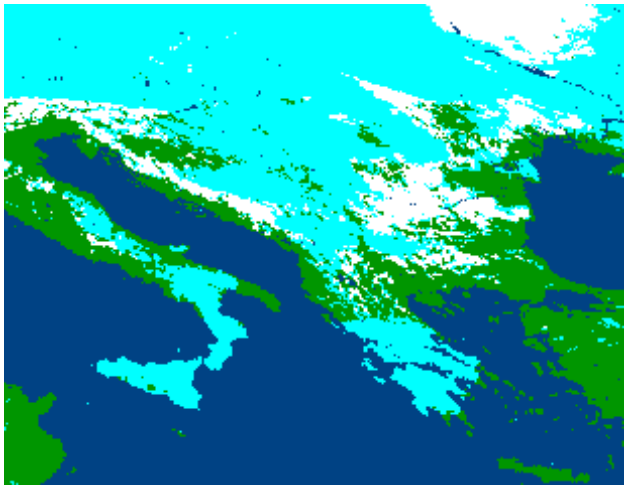

Figure 1 PR-OBS-10 product(snow recognition) of 13.03.2010

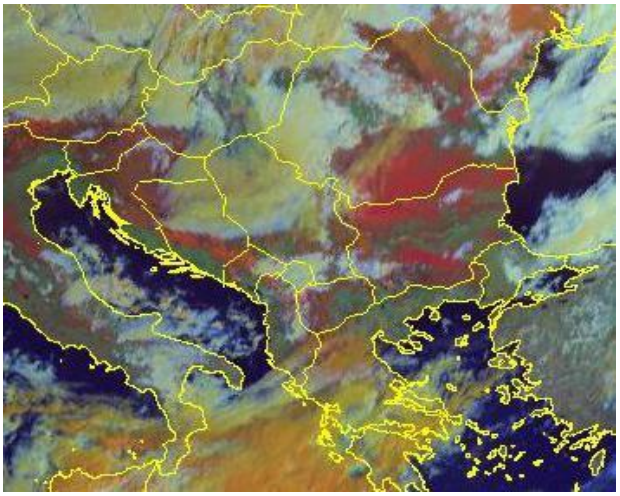

Figure 2 MSG 9-RGB; Day-Snow-Fog; composite of 13.03.2010 08:00 UTC

The different colors in 1b are as follows:

- *white*: low clouds, fog
- *orange*: high clouds

- *green*: snow-free, vegetated terrain
- *red*: snow

RESULT OF COMPARISON

Figure shows the yes snow/no snow information at Bulgarian weather stations included in the Pilot study region. The red symbols depict a snow depth SD ≥ 2 cm, the black ones mark SD < 2 cm. In this region there are 127 stations, 92 of them are located on non-cloudy ground pixels for this date.

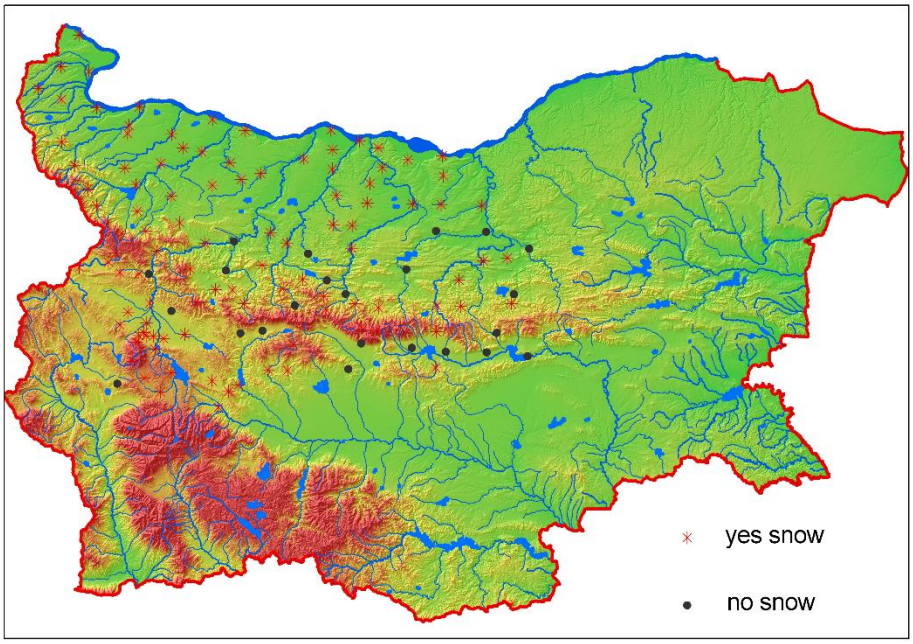

Figure: Yes snow/no snow information at Bulgarian weather stations (pilot region) of 13.03.2010

The calculations are made for the whole pilot region – flat/forest and mountainous points.

For this case, there were 65 hits, 1 false alarm, 9 misses and 17 correct negatives – 92 validation points, from 127 stations. Table below lists several statistical scores calculated from these figures.

Metric	Score-Bulgaria
POD	0.88
FAR	0.02
CSI	0.87
POFD	0.06
ACC	0.72
HSS	0.7

Table: Statistical scores evaluated for case study

CONCLUSION

By comparing the 3a, 3b and 3c images, we see that the correspondence of snow covered area is very good. The statistical scores calculated for this case are very good