

Landslide risk assessment model for disaster prevention and mitigation

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In this presentation:

- ❑ Data collected and its availability per partner
- ❑ Software database with the meteo data
- ❑ UNICam module integration
- ❑ Web-based tools
- ❑ Summary

Harvesting information from weather stations

- Precipitations
- Solar radiation
- Air temperature
- Air humidity
- Wind speed
- Wind direction

Problems and Challenges

- Different weather station types for each region
 - Different data formats
 - Different protocols for receiving the data
- Challenges
 - Unified approach for data acquisition
 - Unified approach for data adaptation and presentation

Smolyan/Smolyan 2 weather stations (Bulgaria)

Smolyan meteorological stations delivered data by http protocol.

Values were given in text file with fixed width of the fields.

Daily Report Smolyan - 2

[Select Refresh to Update]

23/02/16

Time	Temperature	Humidity	Dewpoint	Barometer	Average speed	Gust speed	Direction	Rain last min	Daily rain	Monthly rain	Yearly rain	Heatindex
00:16	07.3	69	02.0	1011.4	0	0	0	0.0	0.0	85.8	85.8	7.3
00:26	07.3	70	02.2	1011.3	0	0	0	0.0	0.0	85.8	85.8	7.3
00:36	07.3	70	02.2	1011.3	0	0	0	0.0	0.0	85.8	85.8	7.3
00:46	07.1	70	02.0	1011.4	0	0	0	0.0	0.0	85.8	85.8	7.1
00:56	07.0	70	01.9	1011.3	0	0	338	0.0	0.0	85.8	85.8	7.0
01:06	06.9	70	01.8	1011.1	0	0	338	0.0	0.0	85.8	85.8	6.9
01:16	06.9	70	01.8	1011.1	0	0	338	0.0	0.0	85.8	85.8	6.9
01:26	06.9	71	02.0	1010.8	0	0	338	0.0	0.0	85.8	85.8	6.9
01:36	06.9	71	02.0	1010.6	0	0	338	0.0	0.0	85.8	85.8	6.9
01:46	06.9	71	02.0	1010.5	0	0	338	0.0	0.0	85.8	85.8	6.9
01:56	06.9	71	02.0	1010.4	0	0	338	0.0	0.0	85.8	85.8	6.9
02:06	06.9	71	02.0	1010.4	0	0	338	0.0	0.0	85.8	85.8	6.9
02:16	06.9	71	02.0	1010.2	0	0	338	0.0	0.0	85.8	85.8	6.9
02:26	07.1	71	02.2	1010.1	0	0	315	0.0	0.0	85.8	85.8	7.1
02:36	07.2	71	02.3	1010.0	0	0	338	0.0	0.0	85.8	85.8	7.2
02:46	07.3	71	02.4	1009.9	0	0	315	0.0	0.0	85.8	85.8	7.3
02:56	07.3	71	02.4	1009.8	0	0	315	0.0	0.0	85.8	85.8	7.3
03:06	07.3	71	02.4	1009.8	0	0	315	0.0	0.0	85.8	85.8	7.3
03:16	07.2	71	02.3	1009.5	0	0	330	0.0	0.0	85.8	85.8	7.2
03:26	07.1	71	02.2	1009.5	0	0	338	0.0	0.0	85.8	85.8	7.1
03:36	06.9	72	02.2	1009.4	0	0	338	0.0	0.0	85.8	85.8	6.9
03:46	06.6	72	01.9	1009.3	0	1	338	0.0	0.0	85.8	85.8	6.6
03:56	06.4	72	01.7	1009.0	0	0	338	0.0	0.0	85.8	85.8	6.4
04:06	06.4	72	01.7	1009.0	0	0	338	0.0	0.0	85.8	85.8	6.4
04:16	06.3	72	01.6	1009.1	0	0	338	0.0	0.0	85.8	85.8	6.3
04:26	06.2	72	01.5	1009.2	0	0	338	0.0	0.0	85.8	85.8	6.2
04:36	06.1	72	01.4	1009.2	0	0	338	0.0	0.0	85.8	85.8	6.1
04:46	06.1	72	01.4	1009.3	0	0	338	0.0	0.0	85.8	85.8	6.1
04:56	05.9	73	01.4	1009.3	0	0	338	0.0	0.0	85.8	85.8	5.9
05:06	05.9	73	01.4	1009.3	0	0	338	0.0	0.0	85.8	85.8	5.9
05:16	05.6	74	01.3	1009.2	0	0	338	0.0	0.0	85.8	85.8	5.6
05:26	05.5	73	01.0	1009.1	0	0	338	0.0	0.0	85.8	85.8	5.5
05:36	05.3	73	00.8	1009.0	0	0	338	0.0	0.0	85.8	85.8	5.3
05:46	05.3	73	00.8	1009.0	0	0	292	0.0	0.0	85.8	85.8	5.3
05:56	05.2	73	00.8	1009.2	0	0	292	0.0	0.0	85.8	85.8	5.2
06:06	05.3	73	00.8	1009.2	0	0	330	0.0	0.0	85.8	85.8	5.3
06:16	05.3	73	00.8	1009.2	0	0	315	0.0	0.0	85.8	85.8	5.3
06:26	05.3	73	00.8	1009.4	0	0	315	0.0	0.0	85.8	85.8	5.3
06:36	05.3	73	00.8	1009.4	0	0	315	0.0	0.0	85.8	85.8	5.3
06:46	05.2	73	00.8	1009.4	0	0	337	0.0	0.0	85.8	85.8	5.2
06:56	05.1	74	00.8	1009.5	0	0	315	0.0	0.0	85.8	85.8	5.1

Подробни (5-минутни) данни за времето в България - любителски автоматични станции (начало архив: 21-03-2011)

ИЗБЕРЕТЕ ВАРИАНТ ЗА ПОКАЗВАНЕ:

год: 2016 мес: 02 ден: 22 срок: 09 UTC бр. дни: 1(5м,0ч.-) ст-ция/срок: ст-ция/дни
ст-ция: Смолян сорт. по: температура в: намаляващ ред (само станд.!) Покази

ПОКАЗАНИ ДАННИ ЗА: Смолян - начало 22.02.2016, 00:00 [най-долу] [-1 ден] [+1 ден]

No.	Станция, часова група	Час на вал. (Бг)	Температури (отн. влажност)			Вятър		Облачност				Водещи явления		Х.вид. Сл.гр. [С.з.] Ситн.	Вал. к. ден [л/ м²]	Атм. нап. Бар. тен. (th) [хПа]
			Възд. (приз.) [т.вал.]	Макс. Мин.	Т.ор. обл.б. [о.в.]	Пос.	Ср.ск. [Порио]	Кол. обща	Кол. н.(ср.) [ниво]	Вид нис.	Вид ср.	Вид вис.	Мом.			
1	Смолян 00 V	00:04	1.8°C [0.9°C]	1.8°C 1.7°C	-1.1°C 366 м [81%]	ИЮИ (112°)	0.3 3.1 2.4 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.8 -0.1
2		00:09	1.8°C [1.7°C]	1.8°C 1.7°C	-0.9°C 345 м [82%]	СИ (45°)	0.3 3.1 2.4 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.9 0.0
3		00:14	1.8°C [0.7°C]	1.8°C 1.7°C	-0.9°C 345 м [82%]	ИСИ (68°)	0.4 3.1 2.4 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.9 +0.2
4		00:19	1.8°C [1.8°C]	1.8°C 1.7°C	-0.9°C 345 м [82%]	И (90°)	0.3 3.1 2.4 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.9 0.0
5		00:25	1.8°C [-0.0°C]	1.8°C 1.7°C	-0.9°C 345 м [82%]	ИЮИ (112°)	0.5 3.1 2.7 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.7 0.0
6		00:29	1.8°C [1.8°C]	1.8°C 1.7°C	-0.9°C 345 м [82%]	И (90°)	1.3 4.6 4.7 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.7 -0.3
7		00:34	1.8°C [-1.9°C]	1.8°C 1.7°C	-0.8°C 324 м [83%]	ЮИ (135°)	1.5 5.1 5.1 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.5 -0.1
8		00:39	1.6°C [0.4°C]	1.8°C 1.6°C	-1.0°C 324 м [83%]	И (90°)	1.9 5.1 5.1 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.6 -0.1
9		00:44	1.6°C [1.0°C]	1.8°C 1.5°C	-1.0°C 324 м [83%]	ИЮИ (112°)	2.4 5.1 5.1 m/s			Night time/ Dry (ср.пад. 0%/0.0 В/м²)				04.	0.0	1018.5 0.0

Cole/Moie weather stations (Italy)

Cole/Moie meteorological stations delivered data by http protocol.

Values were given in different files for each sensor.

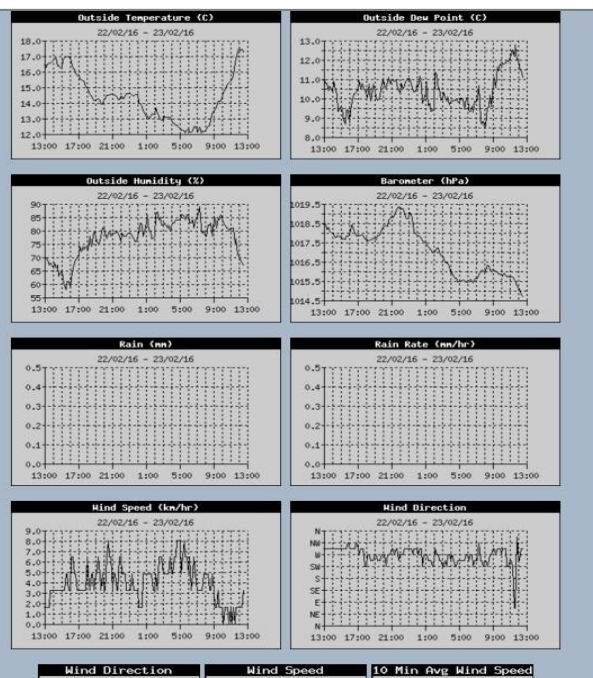
START DATE: 2016-02-22 00:00	END DATE: 2016-02-23 11:34
Sensor code, Date: Year, Month, Day, Hours, Minutes, Temperature [C], Station code	
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1272, 2016, 2, 22, 3, 30, 10.00, 119	
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1272, 2016, 2, 22, 4, 30, 9.30, 119	
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1272, 2016, 2, 22, 6, 0, 9.60, 119	
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1272, 2016, 2, 22, 7, 0, 10.00, 119	
1272, 2016, 2, 22, 7, 30, 10.00, 119	
1272, 2016, 2, 22, 8, 0, 10.30, 119	
1272, 2016, 2, 22, 8, 30, 11.20, 119	
1272, 2016, 2, 22, 9, 0, 12.40, 119	
1272, 2016, 2, 22, 9, 30, 13.60, 119	
1272, 2016, 2, 22, 10, 0, 13.90, 119	
1272, 2016, 2, 22, 10, 30, 14.30, 119	
1272, 2016, 2, 22, 11, 0, 14.30, 119	
1272, 2016, 2, 22, 11, 30, 14.50, 119	
1272, 2016, 2, 22, 12, 0, 14.20, 119	
1272, 2016, 2, 22, 12, 30, 14.40, 119	
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1272, 2016, 2, 22, 15, 30, 14.60, 119	
1272, 2016, 2, 22, 16, 0, 14.70, 119	
1272, 2016, 2, 22, 16, 30, 14.50, 119	
1272, 2016, 2, 22, 17, 0, 14.70, 119	

Panagopoula weather station (Greece)

Panagopoula meteorological station delivered data by http protocol.

Sensor values were given in common fixed width text file.

Current Weather in Panagopoula, 12:35,23/02/16	
Temperature Θερμοκρασία	17.0°C
Humidity Υγρασία	68%
Dewpoint Σημείο Δρόσου	11.0°C
Wind Άνεμος	4.8 km/h at W
Barometer Βαρόμετρο	1014.7 & Falling Slowly
Today's Rain Σημερινός Υετός	0.0 mm
Rain Rate Παράδοση	0.0 mm/hr
Storm Total Τρέχουσα κακοκαιρία	0.0 mm
Monthly Rain Μηνιαίος Υετός	50.2 mm
Yearly Rain Ετήσιος υετός	210.2 mm
Wind Chill Αίσθηση ψύχους	17.0°C
THW Index Φαινόμενη Θερμ.	16.7°C
Heat Index Δείκτης δυσφορίας	16.7°C
Sunrise Ανατολή	8:23
Sunset Δύση	19:10



Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt. Speed	Wind Dir	Wind Speed	Hi Dir	Hi Temp	Hi Dir	Chill Index	Heat Index	THW	Bar	Rain Rate	Heat D-O	Cool D-O	In Hum	In Temp	In Wind	In Hum	In Heat	EMC Density	In Air Smp	Wind Tx	Recess Int.	Apri.	
22/02/16	0:10	11.3	11.4	11.3	75	6.9	3.2	SW	0.54	9.7	W	11.3	11.1	11.3	1018.9	0.00	0.0	0.040	0.000	15.9	53	6.1	14.9	9.95	0760	230	1	100.0	
22/02/16	0:20	11.2	11.3	11.2	75	6.9	3.2	SW	0.54	6.4	SW	11.2	10.9	10.9	1018.8	0.00	0.0	0.050	0.000	15.7	54	6.4	14.8	10.15	0760	229	1	100.0	
22/02/16	0:30	10.9	11.1	10.9	76	6.9	1.6	SW	0.27	4.8	SW	10.9	10.8	10.8	1018.8	0.00	0.0	0.051	0.000	15.6	54	6.3	14.7	10.15	0761	233	1	100.0	
22/02/16	0:40	10.8	10.9	10.8	77	7.0	1.6	SW	0.27	4.8	SW	10.8	10.7	10.7	1018.9	0.00	0.0	0.052	0.000	15.6	54	6.3	14.6	10.15	0761	232	1	100.0	
22/02/16	0:50	10.7	10.8	10.6	80	7.4	1.6	SW	0.27	4.8	SW	10.7	10.7	10.7	1018.9	0.00	0.0	0.053	0.000	15.4	54	6.2	14.5	10.15	0761	231	1	100.0	
22/02/16	1:00	10.4	10.8	10.4	78	6.7	1.6	SW	0.27	3.2	SW	10.4	10.3	10.3	1018.9	0.00	0.0	0.055	0.000	15.1	55	6.3	14.4	10.26	0761	233	1	100.0	
22/02/16	1:10	10.7	10.7	10.4	77	6.9	3.2	SW	0.54	6.4	SW	10.7	10.6	10.6	1019.1	0.00	0.0	0.051	0.000	15.2	55	6.2	14.3	10.26	0762	233	1	100.0	
22/02/16	1:20	11.3	11.3	10.8	78	7.6	3.2	WSW	0.54	11.3	WSW	11.3	11.1	11.1	1019.2	0.00	0.0	0.049	0.000	15.3	56	6.5	14.4	10.45	0762	233	1	100.0	
22/02/16	1:30	11.8	11.8	11.3	77	7.9	4.8	WSW	0.80	12.9	W	11.8	11.6	11.6	1019.2	0.00	0.0	0.046	0.000	15.1	57	6.9	14.5	10.56	0761	234	1	100.0	
22/02/16	1:40	11.9	11.9	11.8	78	8.2	4.8	WSW	0.80	16.5	W	11.9	11.7	11.7	1019.0	0.00	0.0	0.044	0.000	15.1	60	7.6	14.6	11.14	0761	234	1	100.0	
22/02/16	1:50	12.2	12.2	12.2	74	7.7	3.2	W	0.54	17.7	W	12.2	12.1	12.1	1019.0	0.00	0.0	0.042	0.000	15.4	58	7.2	14.6	10.75	0761	234	1	100.0	
22/02/16	2:00	12.8	12.8	12.2	69	7.2	3.2	WSW	0.54	14.5	WSW	12.8	12.3	12.3	1019.0	0.00	0.0	0.039	0.000	15.5	55	6.5	14.6	10.25	0761	232	1	100.0	
22/02/16	2:10	12.7	12.8	12.7	74	8.1	1.6	W	0.27	20.9	W	12.7	12.3	12.3	1018.9	0.00	0.0	0.039	0.000	15.6	56	6.8	14.7	10.45	0760	234	1	100.0	
22/02/16	2:20	12.8	12.8	12.6	73	8.1	3.2	W	0.54	16.1	W	12.8	12.5	12.5	1018.7	0.00	0.0	0.038	0.000	15.6	57	7.1	14.8	10.55	0760	230	1	100.0	
22/02/16	2:30	13.1	13.1	12.8	72	8.1	3.2	NW	0.54	9.7	SW	13.1	12.7	12.7	1018.7	0.00	0.0	0.037	0.000	15.6	58	7.4	14.8	10.75	0760	232	1	100.0	
22/02/16	2:40	13.0	13.1	13.0	75	8.5	3.2	NW	0.54	14.5	NW	13.0	12.7	12.7	1018.6	0.00	0.0	0.037	0.000	15.6	58	7.4	14.8	10.75	0760	233	1	100.0	
22/02/16	2:50	12.8	13.0	12.8	75	8.5	3.2	WSW	0.54	12.9	WSW	12.8	12.6	12.6	1018.5	0.00	0.0	0.038	0.000	15.6	58	7.4	14.8	10.75	0760	234	1	100.0	
22/02/16	3:00	12.4	12.8	12.4	71	7.3	4.8	WSW	0.80	19.3	W	12.4	12.1	12.1	1018.6	0.00	0.0	0.041	0.000	15.6	58	7.4	14.8	10.75	0760	234	1	100.0	
22/02/16	3:10	13.2	13.2	12.4	69	7.7	4.8	NW	0.80	14.5	SSE	13.2	12.8	12.8	1018.5	0.00	0.0	0.035	0.000	15.6	57	7.1	14.8	10.55	0760	234	1	100.0	
22/02/16	3:20	13.6	13.6	13.3	65	7.2	4.8	WSW	0.80	17.7	WSW	13.6	13.1	13.1	1018.7	0.00	0.0	0.033	0.000	15.7	56	6.9	14.8	10.45	0760	234	1	100.0	
22/02/16	3:30	13.7	13.7	13.6	67	7.7	6.4	NW	1.07	20.9	NW	13.7	13.2	13.2	1018.8	0.00	0.0	0.032	0.000	15.7	55	6.7	14.8	10.25	0760	234	1	100.0	
22/02/16	3:40	13.6	13.7	13.6	68	7.8	4.8	NW	0.80	19.3	W	13.6	13.1	13.1	1018.8	0.00	0.0	0.033	0.000	15.8	56	7.0	14.9	10.45	0760	233	1	100.0	
22/02/16	3:50	13.6	13.7	13.5	68	7.8	6.4	W	1.07	24.1	NW	13.5	13.1	13.0	1018.9	0.00	0.0	0.033	0.000	15.8	56	7.1	15.0	10.45	0760	233	1	100.0	
22/02/16	4:00	13.4	13.6	13.4	69	7.9	6.4	W	1.07	19.3	W	13.3	13.0	12.9	1018.9	0.00	0.0	0.034	0.000	15.8	56	7.1	15.0	10.45	0760	233	1	100.0	
22/02/16	4:10	13.4	13.4	13.3	69	7.9	4.8	W	0.80	12.9	W	13.4	13.0	13.0	1019.2	0.00	0.0	0.034	0.000	15.9	56	7.1	15.1	10.45	0760	233	1	100.0	
22/02/16	4:20	13.8	13.8	13.4	69	8.2	3.2	NW	0.54	11.3	SW	13.8	13.3	13.3	1019.0	0.00	0.0	0.032	0.000	15.9	57	7.4	15.1	10.56	0759	234	1	100.0	
22/02/16	4:30	13.7	13.8	13.7	73	9.0	3.2	NW	0.54	16.1	SW	13.7	13.4	13.4	1019.1	0.00	0.0	0.032	0.000	15.9	58	7.7	15.2	10.75	0759	232	1	100.0	
22/02/16	4:40	13.7	13.7	13.6	71	8.5	3.2	NW	0.54	8.0	NW	13.7	13.3	13.3	1018.9	0.00	0.0	0.032	0.000	16.0	58	7.7	15.2	10.75	0759	233	1	100.0	
22/02/16	4:50	13.8	13.8	13.6	70	8.4	3.2	NW	0.54	12.9	NW	13.8	13.3	13.3	1019.0	0.00	0.0	0.032	0.000	16.0	58	7.7	15.2	10.75	0759	233	1	100.0	
22/02/16	5:00	13.5	13.8	13.5	64	6.8	3.2	W	0.54	12.9	NW	13.5	12.9	12.9	1019.0	0.00	0.0	0.034	0.000	16.1	58	7.8	15.3	10.75	0759	233	1	100.0	
22/02/16	5:10	14.7	14.7	13.5	54	5.5	11.3	W	1.88	17.8	W	14.1	13.7	13.1	1019.0	0.00	0.0	0.025	0.000	16.1	49	5.4	14.9	9.11	0760	233	1	100.0	
22/02/16	5:20	15.0	15.1	14.7	52	5.2	12.9	SW	2.15	17.0	SW	14.1	14.0	13.1	1018.9	0.00	0.0	0.023	0.000	16.3	47	4.9	15.1	8.92	0759	233	1	100.0	
22/02/16	5:30	15.0	15.0	14.9	51	4.9	9.7	WSW	1.61	22.5	WSW	14.7	13.9	13.5	1019.0	0.00	0.0	0.023	0.000	16.4	46	4.7	15.2	8.79	0759	232	1	100.0	
22/02/16	5:40	14.7	15.0	14.7	54	5.5	8.0	W	1.34	22.5	NW	14.6	13.8	13.6	1019.1	0.00	0.0	0.025	0.000	16.4	46	4.8	15.2	8.79	0759	232	1	100.0	
22/02/16	5:50	14.2	14.7	14.2	66	8.0	3.2	WSW	0.54	11.3	WSW	14.2	13.7	13.7	1018.9	0.00	0.0	0.029	0.000	16.5	47	5.1	15.3	8.92	0759	234	1	100.0	
22/02/16	6:00	12.7	14.2	12.7	79	9.1	1.6	NW	0.27	4.8	NW	12.7	12.5	12.5	1018.9	0.00	0.0	0.039	0.000	16.6	53	6.9	15.6	9.95	0758	231	1	100.0	
22/02/16	6:10	12.4	12.7	12.4	81	9.2	1.6	NW	0.27	4.8	NW	12.4	12.2	12.2	1019.1	0.00	0.0	0.041	0.000	16.4	57	7.9	15.7	10.58	0758	233	1	100.0	
22/02/16	6:20	12.3	12.4	12.3	81	9.2	1.6	NW	0.27	4.8	NW	12.3	12.2	12.2	1019.2	0.00	0.0	0.042	0.000	16.3	58	8.0	15.6	10.75	0758	232	1	100.0	
22/02/16	6:30	12.3	12.3	12.2	80	8.9	1.6	NW	0.27	4.8	NW	12.3	12.1	12.1	1019.2	0.00	0.0	0.042	0.000	16.2	59	8.1	15.4	10.95	0758	233	1	100.0	
22/02/16	6:40	12.0	12.3	12.0	82	8.9	1.6	NW	0.27	3.2	NW	12.0	11.9	11.9	1019.5	0.00	0.0	0.044	0.000	16.1	59	8.1	15.4	10.95	0759	232	1	100.0	
22/02/16	6:50	11.6	12.0	11.6	79	8.0	1.6	NW	0.27	3.2	NW	11.6	11.4	11.4	1019.5	0.00	0.0	0.047	0.000	16.0	59	8.0	15.3	10.95	0759	232	1	100.0	
22/02/16	7:00	11.1	11.6	11.1	78	7.4	1.6	NW	0.27	3.2	NW	11.1	10.9	10.9	1019.5	0.00	0.0	0.050	0.000	15.9	59	7.9	15.2	10.95	0759	230	1	100.0	
22/02/16	7:10	10.4	11.1	10.4	82	7.5	0.0	NW	0.80	1.6	NW	10.4	10.4	10.4	1019.7	0.00	0.0	0.055	0.000	15.7	58	7.4	14.9	10.75	0760	233	1	100.0	
22/02/16	7:20	10.8	10.8	10.4	84	8.2	1.6	NW	0.27	4.8	NW	10.8	10.8	10.8	1019.7	0.00	0.0	0.052	0.000	15.5	59	7.5	14.7	10.95	0761	232	1	100.0	
22/02/16	7:30	10.9	10.9	11.0	80	8.1	7.8	3.2	W	0.54	8.0	SW	10.9	10.9	10.9	1020.7	0.00	0.0	0.051	0.000	15.4	59	7.5	14.7	10.95	0761	234	1	100.0
22/02/16	7:40	11.2	11.2	11.1	81	8.2	3.2	W	0.54	11.3	SW	11.2	11.1	11.1	1020.8	0.00	0.0	0.044	0.000	15.4	60	7.6	14.7	10.95	0761	235	1	100.0	
22/02/16	7:50	11.9	11.9	11.2	84	9.3	3.2	W	0.54	14.5	WSW	11.9	11.9	11.9	1020.8	0.00	0.0	0.044	0.000	15.4	62	8.1	14.7	11.46	0761	234	1	100.0	
22/02/16	8:00	12.3	12.3	11.9	82	9.3	1.6	WSW	0.																				

Bielsko Biala weather station (Poland)

Bielsko Biala weather station was connected to OpenWeatherMap site.

The data was available in JSON format.

Biala Podlaska, PL

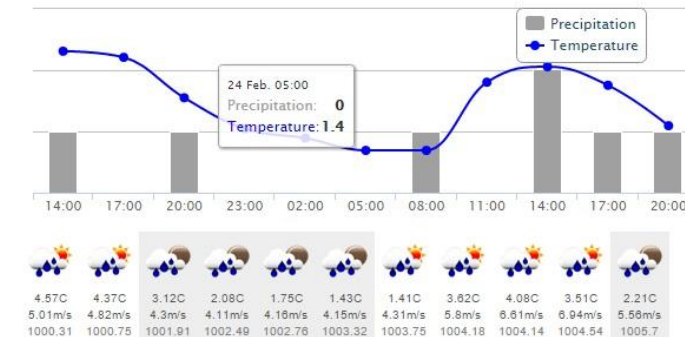
 4.6 °C

Rain
get at 2016.02.23 12:43 (Wrong data?)

Wind	Gentle Breeze 5.01 m/s West (265.503)
Cloudiness	overcast clouds
Pressure	1000.31 hpa
Humidity	92 %
Rain	0.13
Sunrise	7:29
Sunset	17:55
Geo coords	[23.12, 52.03]

Main Daily Hourly Chart Map Satellite

Next hours



```

JSON
Object
  station
    Object
      name : traxelektronik
      type : 5
      status : 20
      user_id : 0
      id : 1454660325
      coord
        Object
          lon : 19.2103
          lat : 49.7197
  last
    Object
      main
        Object
          temp : 276.85
          humidity : 88.8
          pressure : 965.2
      wind
        Object
          speed : 3.4
          deg : 328.4
      rain
        Object
          today : 0.2
      radiation
        Object
          lum : 46.1
      calc
        Object
          dewpoint : 2
          dt : 1456229396
  params
    Array
  
```


Harvest forecast meteo data

- Weather forecast data for all sites was harvested from openweathermap.org

openweathermap.org

	geo_forecast_grid_id	longitude	latitude	forecast_datetime	temp	pressure	humidity	wind_speed	rain
	legint	numer(10,4)	numer(10,4)	timestamp without time zone	numer(10,2)	numer(10,2)	numer(10,2)	numer(10,2)	numer(10,2)
1	1	13.0909	43.5201	2016-02-22 14:00:00	287.29	1027.34	81.00	2.72	
2	1	13.0909	43.5201	2016-02-22 17:00:00	288.08	1025.06	76.00	4.01	
3	1	13.0909	43.5201	2016-02-22 20:00:00	287.10	1025.58	78.00	6.33	
4	1	13.0909	43.5201	2016-02-22 23:00:00	285.84	1024.41	82.00	2.17	
5	1	13.0909	43.5201	2016-02-23 02:00:00	283.90	1024.09	93.00	2.57	
6	1	13.0909	43.5201	2016-02-23 05:00:00	284.59	1023.09	88.00	2.88	0.02
7	1	13.0909	43.5201	2016-02-23 08:00:00	284.20	1020.93	92.00	3.78	0.45
8	1	13.0909	43.5201	2016-02-23 11:00:00	284.57	1020.24	94.00	3.51	0.70
9	2	13.0909	43.5209	2016-02-22 14:00:00	287.29	1027.34	81.00	2.72	
10	2	13.0909	43.5209	2016-02-22 17:00:00	288.08	1025.06	76.00	4.01	
11	2	13.0909	43.5209	2016-02-22 20:00:00	287.10	1025.58	78.00	6.33	
12	2	13.0909	43.5209	2016-02-22 23:00:00	285.84	1024.41	82.00	2.17	
13	2	13.0909	43.5209	2016-02-23 02:00:00	283.90	1024.09	93.00	2.57	
14	2	13.0909	43.5209	2016-02-23 05:00:00	284.59	1023.09	88.00	2.88	0.02
15	2	13.0909	43.5209	2016-02-23 08:00:00	284.20	1020.93	92.00	3.78	0.45
16	2	13.0909	43.5209	2016-02-23 11:00:00	284.57	1020.24	94.00	3.51	0.70
17	1	13.0909	43.5201	2016-02-23 17:00:00	290.14	1017.20	78.00	5.52	
18	2	13.0909	43.5209	2016-02-22 14:00:00	287.29	1027.34	81.00	2.72	
19	2	13.0909	43.5209	2016-02-22 17:00:00	288.08	1025.06	76.00	4.01	
20	2	13.0909	43.5209	2016-02-22 20:00:00	287.10	1025.58	78.00	6.33	
21	2	13.0909	43.5209	2016-02-22 23:00:00	285.84	1024.41	82.00	2.17	
22	2	13.0909	43.5209	2016-02-23 02:00:00	283.90	1024.09	93.00	2.57	
23	2	13.0909	43.5209	2016-02-23 05:00:00	284.59	1023.09	88.00	2.88	0.02
24	2	13.0909	43.5209	2016-02-23 08:00:00	284.20	1020.93	92.00	3.78	0.45
25	2	13.0909	43.5209	2016-02-23 11:00:00	284.57	1020.24	94.00	3.51	0.70
26	2	13.0909	43.5209	2016-02-23 14:00:00	285.28	1017.91	94.00	0.42	0.28
27	2	13.0909	43.5209	2016-02-23 17:00:00	285.47	1016.02	93.00	2.76	0.80
28	2	13.0909	43.5209	2016-02-23 20:00:00	285.00	1015.43	92.00	2.78	1.37
29	2	13.0909	43.5209	2016-02-23 23:00:00	284.34	1015.91	96.00	4.61	0.46
30	2	13.0909	43.5209	2016-02-24 02:00:00	283.94	1015.99	98.00	4.42	0.41
31	2	13.0909	43.5209	2016-02-24 05:00:00	282.95	1015.83	100.00	3.76	0.38
32	2	13.0909	43.5209	2016-02-24 08:00:00	282.44	1016.79	100.00	3.12	
33	2	13.0909	43.5209	2016-02-24 11:00:00	284.47	1017.47	98.00	2.31	0.02

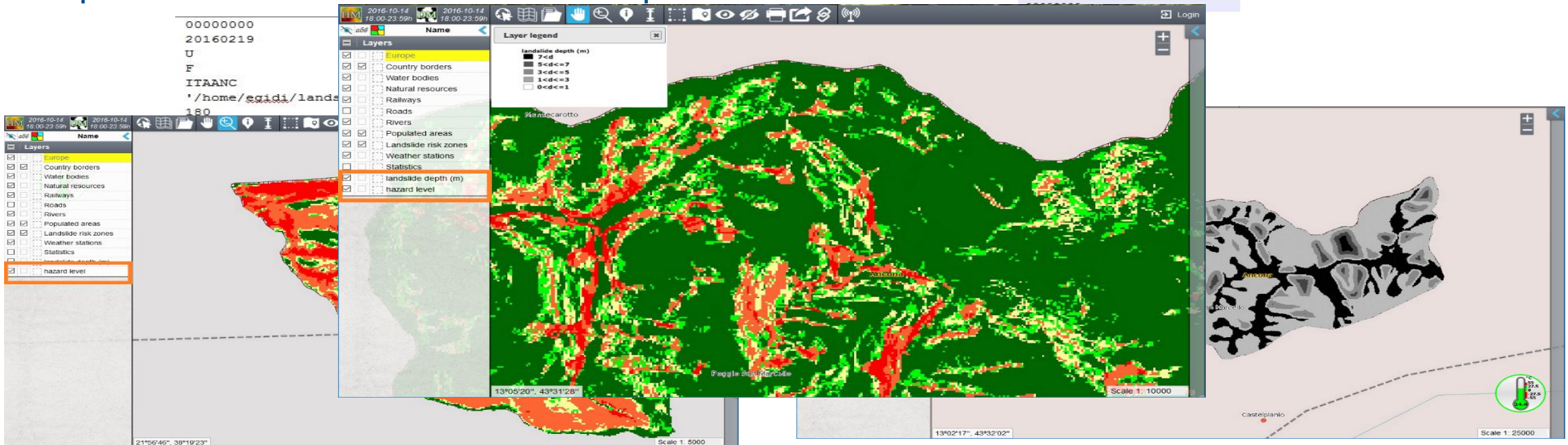
- Data format was JSON. The OpenWeatherMap site provided specialized, well described methods for data acquisition
- Software module has been developed for harvesting the forecast data.

Integration with Landslide MODULE

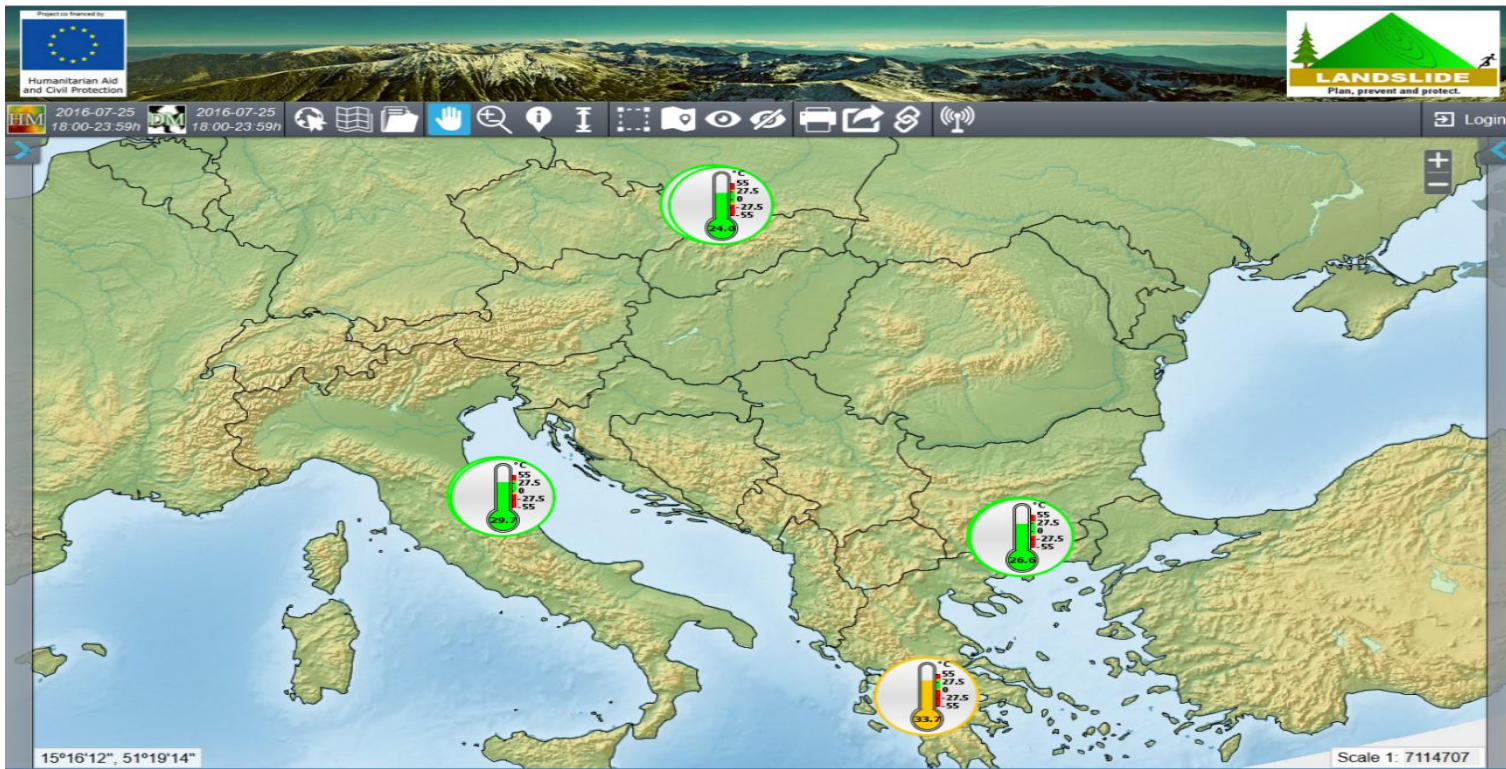
- ❑ Landslide Module worked as executable program, that has to receive files with weather data as input, and produce georeferenced raster files (asc format).
- ❑ Integration with Landslide Module was done in addition.

Input forecast data

Input weather station data



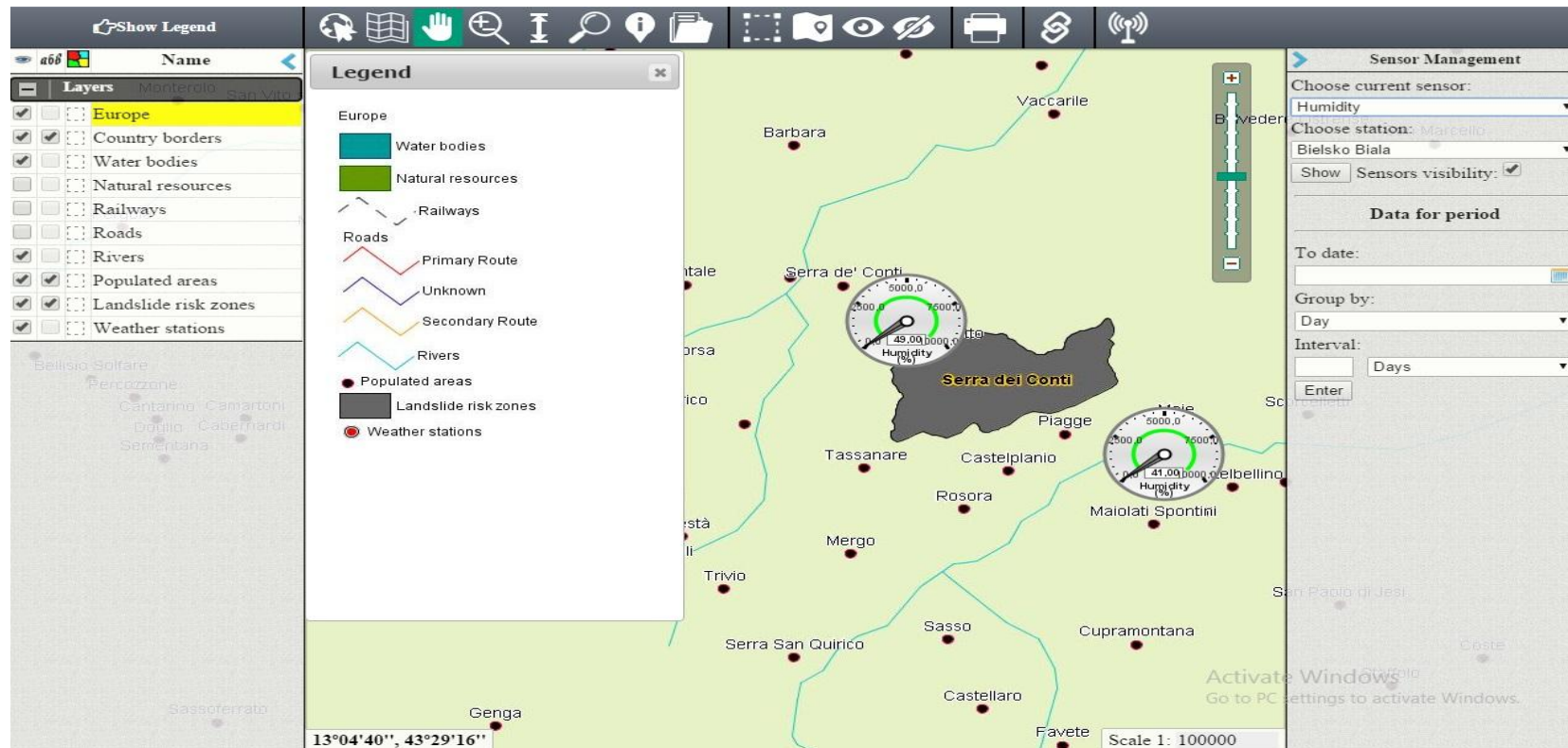
WEB MODULE



- ☐ Zoom in/out
- ☐ Pan
- ☐ Scale management
- ☐ Identify
- ☐ Attribute search
- ☐ Feature selection
- ☐ Printing

- ☐ Webmapping module with rich standard GIS functionalities

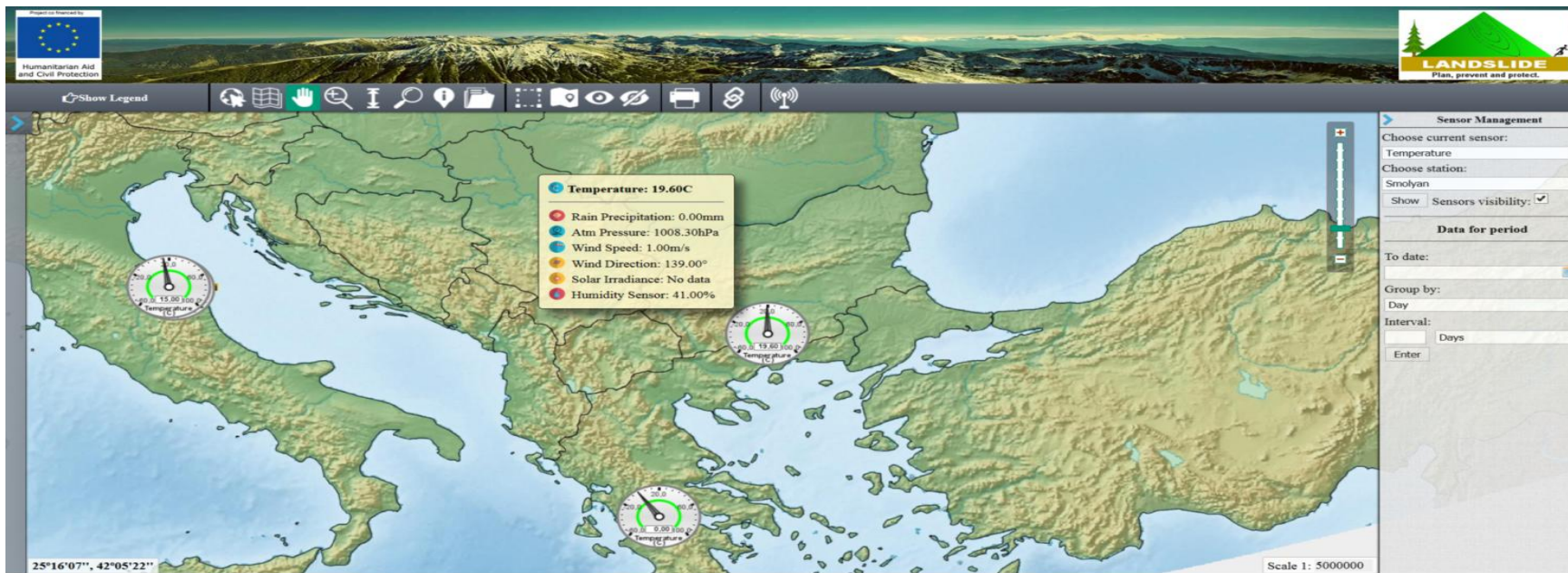
WEB MODULE



- ☐ Layer visibility management
- ☐ Labeling visibility management
- ☐ Layer's attribute data displaying / querying
- ☐ Legend presentation

☐ Advanced visualization GIS functionalities

WEB MODULE

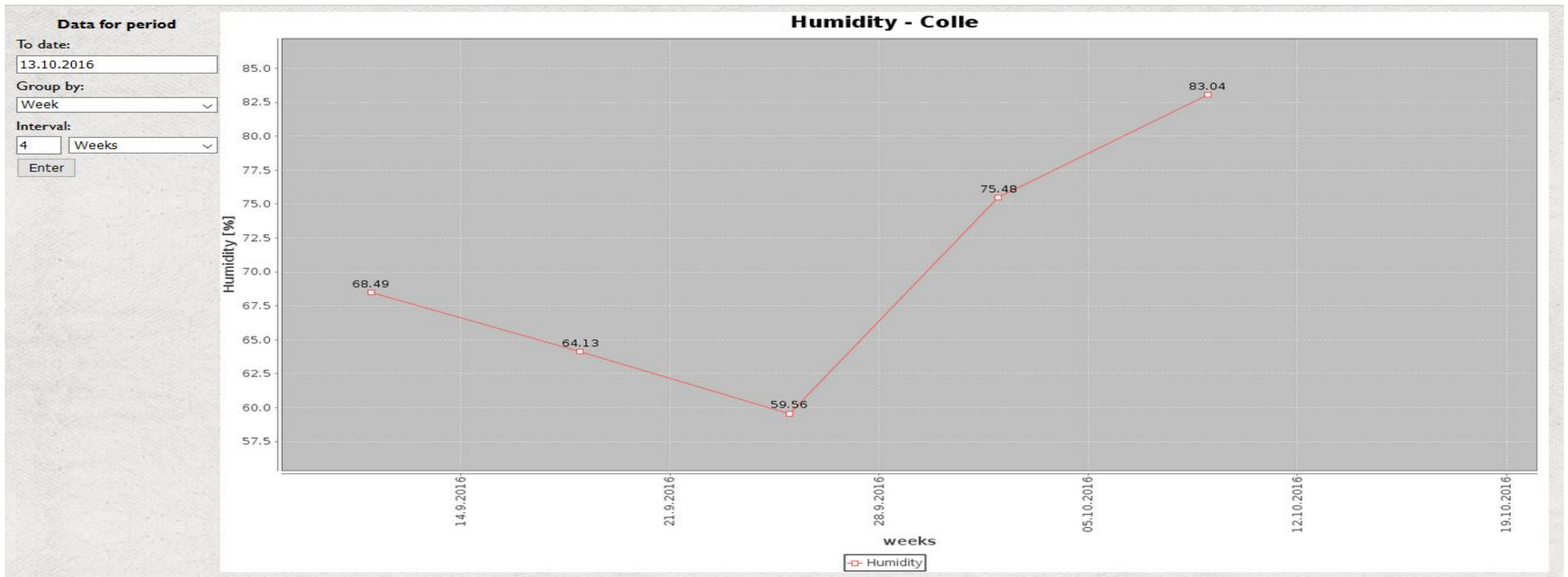


- ☐ Stations visibility
- ☐ Default sensor presentation
- ☐ On the fly sensors data output
- ☐ Detailed information for every sensor
- ☐ Ability to display historical data from sensors

- ☐ Functionality for gathering and presenting weather data from the meteorological stations on the fly

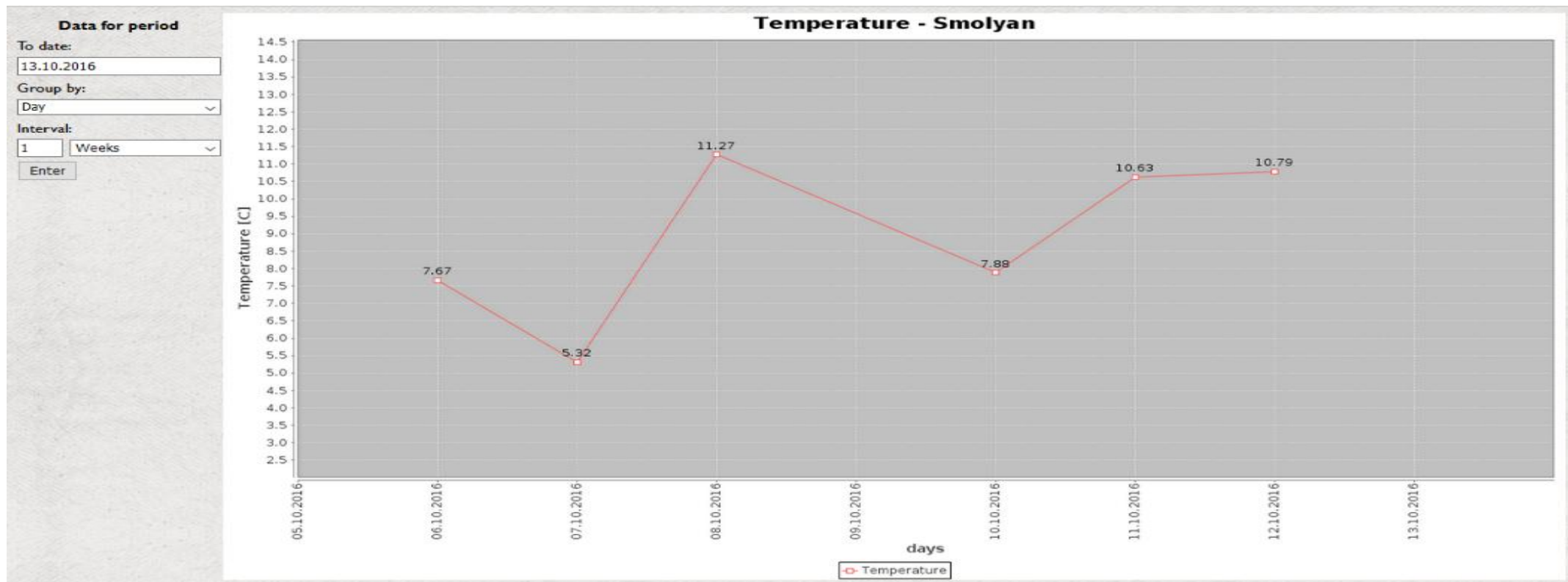
WEB MODULE – Historical data

- Historical weather station data for humidity in Colle



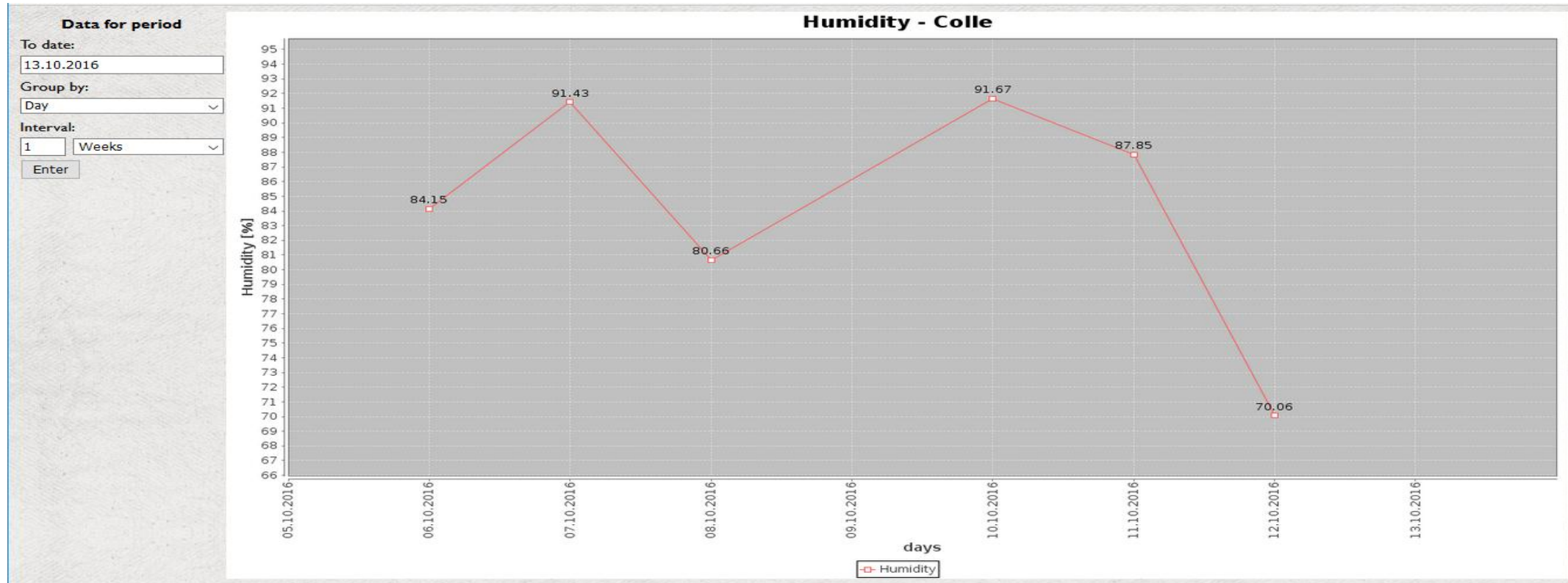
WEB MODULE – Historical data

- ❑ Historical sensor data presentation
- ❑ Parameterized historical data grouping



WEB MODULE – Historical data

- Historical sensor data presentation
- Parameterized historical data grouping

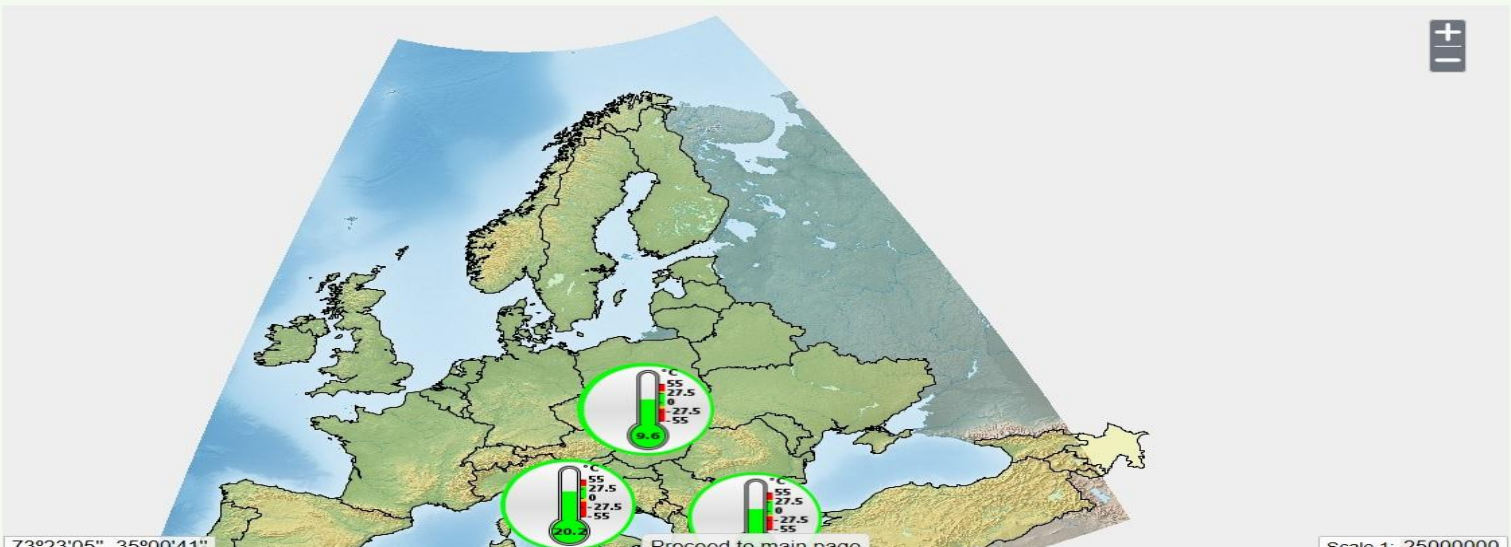


SUMARRY

- ALL information is available on the web-site under tab TOOLS:

Training platform: [click here](#)

[MAP](#)



73°23'05", 35°00'41"

Proceed to main page

Scale 1: 25000000

LANDSLIDE software help desk e-mail: landslide.info@gmail.com

ALTER

Alliance for Disaster Risk Reduction

Thank you!

Assoc. Prof. Dr. Nina Dobrinkova

ninabox2002@gmail.com



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