SOL - A Flood Forecast System focused on Milan Area and the cities along Seveso, Olona, and Lambro rivers

F.A.Q.

1. **What does SOL mean?**

   SOL is the acronym of Seveso Olona Lambro, the three main rivers of Milan area and surrounding territories that are modelled in the system. It is the object of this crowdfunding campaign.

2. **What is SOL project?**

   SOL system is a monitoring and real-time flood forecasting operative system focused on Milan area and the municipalities along Seveso, Olona and Lambro rivers. It provides flood forecasts up to 24-36 hours in advance, letting citizens, enterprises and authorities, according to their own responsibility, to activate the preventive protection measures in order to reduce flood damages.

3. **Who is the research group?**

   The project was born from the partnership between the *Real Time Hydrology* research group of Politecnico di Milano and the university startup MMI. Professor Marco Mancini, which has taught Hydraulic Engineering since 2000, coordinates the *Real Time Hydrology* research group. MMI, leaded by Engineer Stefania Meucci, is a Politecnico di Milano startup: five engineers currently work at MMI and it has a long-standing research experience about hydrological-hydraulic processes causing floods.

4. **Where can I consult SOL?**

   The system is online: its website is sol.mmidro.it.

5. **How should I use SOL?**

   You should look at SOL just like you use to watch the daily weather forecast on the media, with the difference that SOL can foresee a probable future overflow that can cause a flood.

6. **Can I trust SOL?**

   The website dashboard shows the probability of crossing different alert thresholds: therefore, SOL does not foresee with absolute certainty the occurrence of a flood, just like the weather forecasts cannot predict with absolute certainty the future weather conditions.

7. **Why should I donate?**

   - To help supporting and improving an innovative system for everyone, which aims at people safety and territorial safeguard;
   - To support a long-time ongoing research and cooperation with the international and national technical-scientific community, which allows SOL to be an innovative tool.

8. **What my donation will be used for?**

   Donations will allow us to maintain, update and improve this project and to create a communication system addressed to population living in hazardous areas.

9. **Where, when and how can I donate?**

   You can donate via Bank transfer, Credit card or PayPal on the crowdfunding certified platform "Produzioni dal basso". Fundraising will be active for a limited period, from November 15, 2017 to March 15, 2018. All the information are available at http://sostieni.link/16421 .

10. **Where can I contact you? / Where can I find out more about the progress of the project and the news?**

    If you require any further information**,** please feel free to contact us at sol.produzionidalbasso@gmail.com or follow us for updates and news:

    - Facebook: SOL – Sistema di previsione di piena;
    - Twitter: @ProgettoSOL.

11. **How does SOL forecast possible future flood?**

    SOL bases on a system of coupled limited area meteorological models and a physically-based/spatially-distributed hydrological model, developed by the Politecnico di Milano research group. Essentially the various meteorological models output becomes the hydrological models input: the output of these models gives then the forecast flood scenario related to the next few hours and days**.**

12. **Is SOL the official tool used by authorities?**

    No, SOL is mainly a university research project. However, it could be synergistic with regional civil protection systems thanks to a citizen-oriented information tool, addressed to people living or working in potentially floodable areas. Currently, Bovisio Masciago's Civil Protection and Milano Parco Nord technicians are successfully employing this system.

13. **How long it will take SOL to be fully active and working?**

    SOL is already active and working and gives its results for some sections of the Seveso-Olona-Lambro rivers. Your contribution will help us to continue our research, improve the model and expand the number of involved Municipalities.

14. How can I know when a flood is coming?

By consulting our website sol.mmidro.it you can have a real time snapshot of the flow rate forecast at the available sections of three monitored rivers: thus you can see if the different critical thresholds (yellow / ordinary, orange / moderate, red / high) are overcome.

15. How can I receive notifications?

Currently, you cannot receive personal e-mail or SMS notifications, but you can follow us on Facebook and Twitter to stay tuned about the hydro-meteorological evolution of the expected phenomena.

16. What kind of notifications will I receive (SMS, Whatsapp, Facebook, Twitter, email ...)?

You can stay up-to-date on the evolution of the hydro-meteorological events by directly visiting SOL website or follow us on Facebook and Twitter. Your donation will help us developing a more effective information system that could potentially reach all the interested people.

17. How can I receive notifications on my mobile phone?

Currently this option is not available for the private citizen. Thanks to crowdfunding, we aim to broaden a free information system addressed to whomever could be interested. Now, however, do not hesitate to follow us on Facebook and Twitter: we are publishing constant updates about the evolution of the ongoing hydro-meteorological phenomena, as well as the progress of the project, news and much more!

18. Is SOL compatible with all mobile phones?

Yes, it is. If you have any troubles in displaying the dashboard, please contact us at sol.produzionidalbasso@gmail.com .

19. Is SOL a pay-service?

No, visiting our website and consulting the provided flood forecasts are and will remain completely free of charge.

20. What do the alert symbols on the dashboard mean?

Those symbols stand for a simplified alert interface and define the probable crossing of the yellow, orange or red alert thresholds over the next 24 - 36 hours. In particular the codes are:

Green = no criticism;

Yellow = ordinary level of criticality;

Orange = moderate level of criticality;

Red = high level of criticality.

21. Which is the threshold corresponding to a flooding?

Generally, crossing the red threshold means diffuse flooding. However, even crossing the orange threshold could cause localized flooded areas.

22. Is SOL available only for Seveso, Olona and Lambro rivers? Will it be available for other areas in the future?

Right now SOL is available only for Milan area and surroundings. Our objective is to implement and make available SOL system for other – Italian and foreign – floodable areas: we have activated the crowdfunding campaign in order to reach this goal.

23. Who has developed, manages and updates SOL?

SOL has been developed by MMI in partnership with the *Real Time Hydrology* Research Group from Politecnico di Milano. The same group manages, controls, and updates the system.

24. How much time before can SOL inform me there might be a flood?

Now, we update the information once a day, between 11 am and 15 pm. Therefore, you can be aware about the flood forecast related to the afternoon - evening and the next day. Your donation will help us increasing the refresh frequency in order to provide better and more detailed information.

25. How accurate / reliable is SOL in predicting a flood?

This tool has been working in real time mode only since 2016. We are currently working to reconstruct the reliability of the system over the last few years, through a hydro-meteorological re-analysis of the major occurred events.

26. How long will this project last?

We have not defined a time limit: we will work in order to maintain, update, improve and expand our project as long as the raised funds thanks to this campaign will last.

For further information, please feel free to contact us at sol.produzionidalbasso@gmail.com .

SOL Team