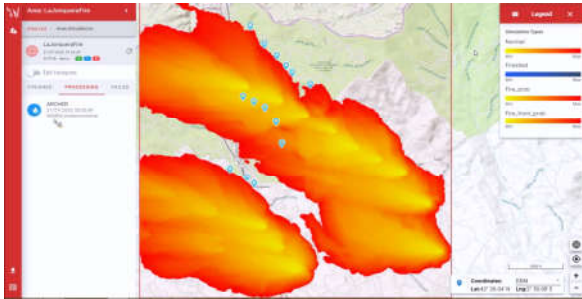


# The Three Use Cases

## Wildfire Monitoring and Forecasting



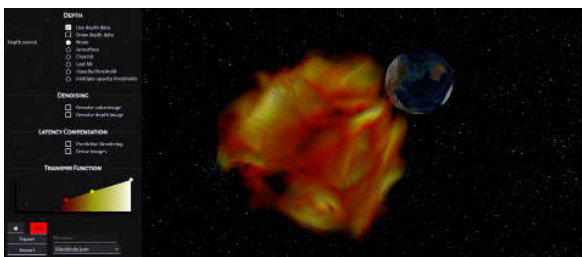
Coupled Weather Simulation and Wildfire Simulation improve Fire Propagation Forecast and Uncertainty Assessment.

## Mosquito-borne Diseases Risk Analysis



Geometrically lifted Persistence Diagrams depict Areas in the Rome Region of High Infection Risks based on R0 Simulation Data.

## Space Weather Effects



OSPRay Ray Tracing to render Region of Interest of iPIC3D data.

## The Partners

**German Aerospace Center (DLR)**,  
Braunschweig/Cologne/Munich, Germany

**EPCC at the University of Edinburgh**,  
Edinburgh, UK

**Kungliga Tekniska Högskolan (KTH)**,  
Stockholm, Sweden

**Sorbonne Université**, Paris, France

**Kitware SAS**, Villeurbanne, France

**INTEL Deutschland GmbH**, Feldkirchen,  
Germany

**Fondazione Bruno Kessler**, Trento, Italy

**Université Paul Sabatier**, Toulouse, France

**Tecnosylva SL**, León, Spain

## Workshop Registration:

Send your contact information to: [vestec@dlr.de](mailto:vestec@dlr.de)  
Registration Fee: **Free of charge**

## Acknowledgement

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VESTEC Final Workshop

# VESTEC Final Workshop

*Virtual and Free Event  
Wed./Thu., Febr. 23/24, 2022*

**Urgent HPC**  
*Interactive Supercomputing  
for Urgent Decision  
Making*



# Invitation to Final Workshop

(Wed./Thu., Feb. 23/24, 2022)

The European-funded H2020 project VESTEC (Visual Exploration and Sampling Toolkit for Extreme Computing) will be completed in 2022 after a successful project duration of 3.5 years. At a two-day closing event, the international project partners from research and industry will present the software solutions they have developed for the assessment and management of acute crisis scenarios. Keynotes of domain experts will invite for intensive discussions. A panel will conclude the workshop. We cordially invite you to this online event.



Urgent Decision Making at DLR's Center for Satellite based Crisis Information (ZKI).

VESTEC develops end-to-end software solutions that support decision makers of the European Union in making urgent decisions in various crisis scenarios. This is done on the basis of simulations on supercomputers to create multiple variations of possible scenarios for urgent decision support in real time. VESTEC makes it possible to combine multiple data sources and extract essential features efficiently. Through interactive supercomputing, flexible and situation-dependent planning is always possible. Exploiting 3D visualizations of the evaluated data, time-critical phenomena can be accurately mapped.

## Program

### Wednesday, February 23, 2022 (CET)

- 09:00 AM (CET) **Welcome Notes / Introduction**  
*Andreas Gerndt (DLR)*
- 09:30 AM **Keynote: Urgent Computing Integrated Services for Earthquakes**  
*Marta Pienkowska (ETH Zurich)*
- 10:15 PM **Coffee Break**
- Session: VESTEC workflow**
- 10:45 AM **Interactive Supercomputing – The VESTEC System and Workflow**  
*Nick Brown (EPCC)*
- 11:15 AM **In-Situ Processing – Topology-based Data Analysis and Compression**  
*Pierre Guillou (Sorbonne University)*
- 11:45 AM **Interactive Data Visualization – Data Streaming and Uncertainty Assessment**  
*Markus Flatken (DLR-SC)*
- 12:15 PM **Lunch Break**
- Session: Use Case 1 – Wildfire**
- 01:15 PM **Keynote: Wildfire Crises Management and Urgent Decision Making**  
*Raúl Quilez Moraga (Tecnosylva)*
- 02:15 PM **Coffee Break**
- 02:30 PM **ZKI – Center for Satellite based Crisis Information (DLR-DFD)**  
*Christian Krullikowski (DLR-DFD)*
- 03:00 PM **Wildfire Decision Support: Requirements, Challenges, Solutions**  
*Miguel Mendes (Tecnosylva)*
- 03:30 PM **Live Demo: Wildfire**  
*Miguel Mendes (Tecnosylva)*
- 04:15 PM **Closing (Day 1)**

### Thursday, February 24, 2022 (CET)

- 09:00 AM (CET) **2. Day Welcome Notes**  
*Andreas Gerndt (DLR)*
- 09:15 AM **Keynote: Spread of Diseases – What did we learn from COVID-19**  
*Flavia Riccardo (Italian Higher Institute of Health)*
- 10:15 PM **Coffee Break**
- Session: Use Case 2 – Mosquito-borne Diseases**
- 10:45 PM **Mosquitos-borne Diseases – Simulation and Analysis**  
*Giorgio Guzzetta (Foundation Bruno Kessler)*
- 11:15 AM **Live Demo: Mosquitos-borne Diseases**  
*Piero Poletti (Foundation Bruno Kessler)*
- 12:00 PM **Lunch Break**
- Session: Use Case 3 – Space Weather**
- 01:00 PM **Space Situational Awareness – Risks from Space**  
*Stefano Markidis (KTH)*
- 01:30 PM **iPIC3D – High-Resolution Space Weather Simulation**  
*Artur Podobas (KTH)*
- 02:00 PM **Live Demo: Space Weather**  
*Artur Podobas (KTH)*
- 02:30 PM **Break**
- 03:00 PM **Panel Discussion: Is UrgentHPC needed at all?**  
*Steven Gibbons (NGI, Norway), Stefano Markidis (KTH), Günther, Johannes (Intel), Nick Brown (EPCC)*
- 04:00 PM **Closing**