# OUR MISSION

HiDALGO2 mission is to provide effective and accurate simulations covering global challenges. The information will be provided quickly and will consider changing conditions like the current weather and traffic.

# OUR VISION

HiDALGO2 vision is to extend the possibilities of the world's leading scientific applications in environmental protection to effectively analyze large-scale and high-precision phenomena that threaten human life and health.

# TECHNOLOGY

HiDALGO2 brings together advanced solutions, including HPC, HPDA, and AI, to provide stakeholders and decision-makers tools to mitigate the tragic consequences of climate and civilization by delivering necessary knowledge.

## CONTACT


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EuroHPC Joint Undertaking

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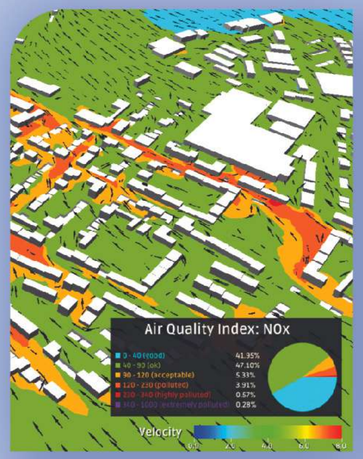
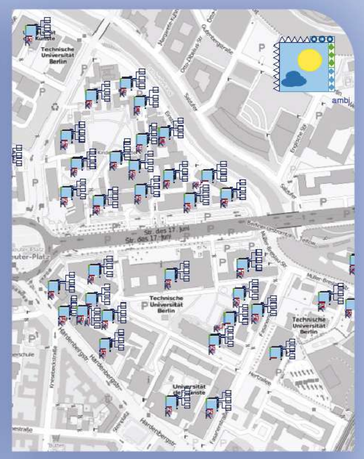
# HiDALGO2

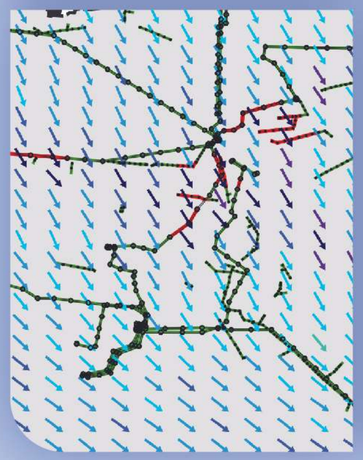
CENTRE OF EXCELLENCE

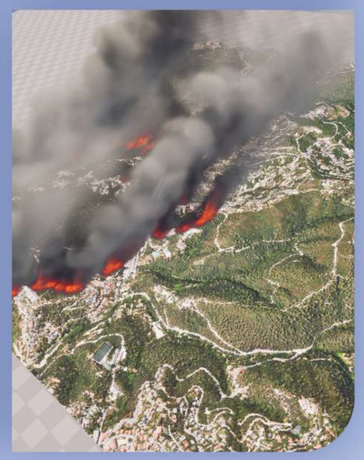
## HPC & BIG DATA TECHNOLOGIES FOR GLOBAL CHALLENGES

# USE CASES







## URBAN AIR PROJECT

In this use case we work around the evolution of air in urban areas considering pollution, wind, comfort and planning. The core of our work here is the Urban Air Flow computational model that is massively based on modern HPC, mathematical, and AI technologies.

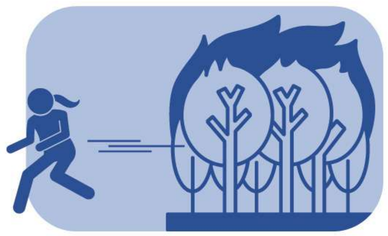
## URBAN BUILDING MODEL

Here we focus on advanced building models for better integration with urban architecture. We aim to provide a source term for heat and air pollutants ($CO_2$ and NOx) to the urban air pollution model. We will use a simplified monozone model to keep the problem size reasonable.

## RENEWABLE ENERGY SOURCES

We aim to advance energy production estimation from renewable energy sources, such as wind farms and solar panels, and also predict damages to the RES infrastructure. We will achieve this by applying uncertainty quantification study to the simulation models and by running the ensembles on a larger scale.

## WILDFIRES



To simulate wildfire-atmosphere interactions and smoke dispersion at various scales, we will implement the computational environment necessary in order to assess the risk and potential impacts induced by mesoscale and microscale fire behaviour in the vicinity of and within WUI zones.