

# Forest Fire Spread Simulation using High Performance Computing System



## OBJECTIVE

To develop wildfire spread simulation model on High Performance Computing System based on Computational Fluid Dynamics (CFD), Non-CFD models and Geomatics technologies

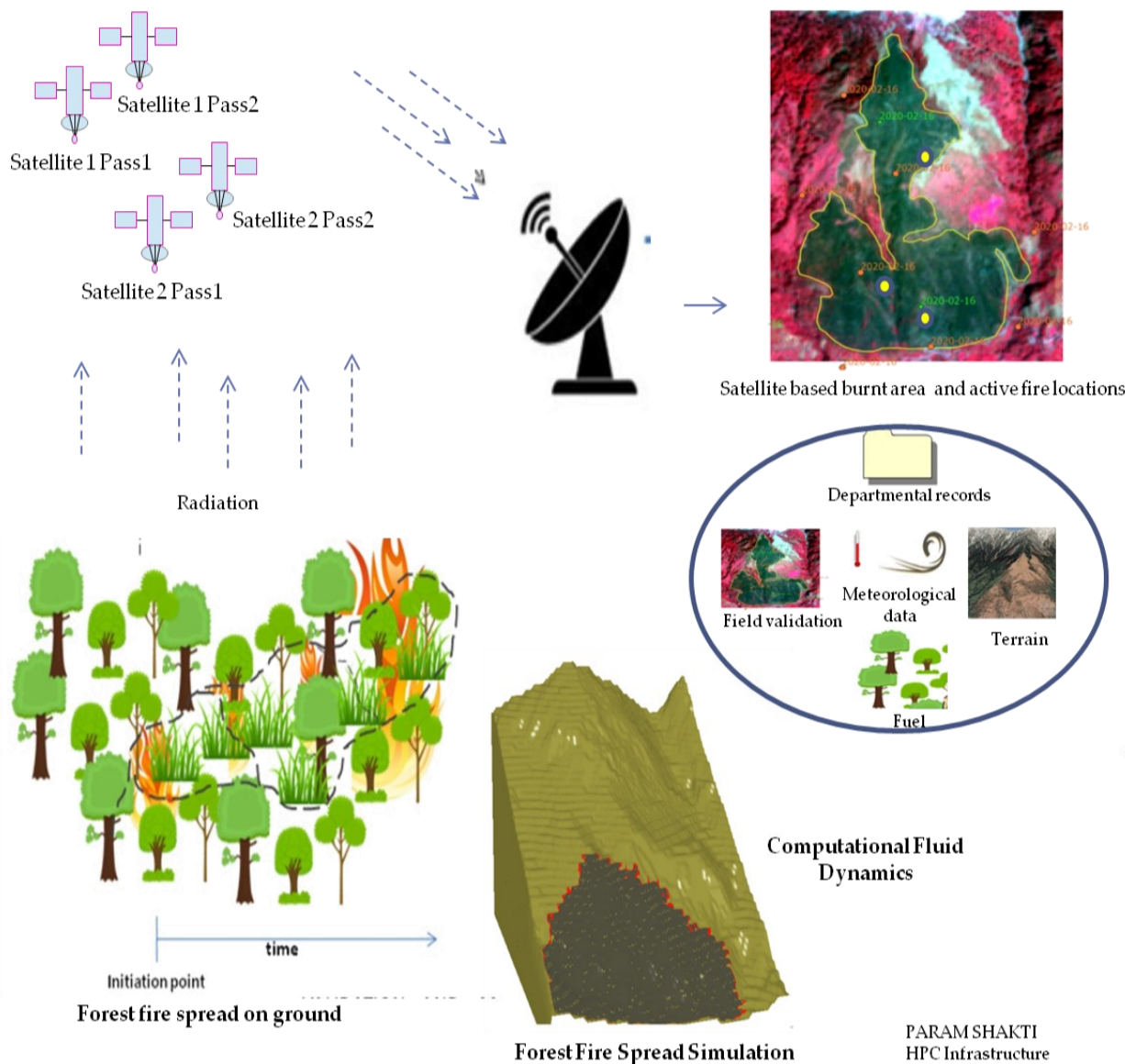
## COLLABORATORS

Indian Institute of Technology (Kharagpur)  
Department of Science and Technology (Sikkim)

## SOCIETAL IMPACT

Timely evacuation of people to reduce casualties;  
Prompt deployment of forest fire fighters to control the forest fire

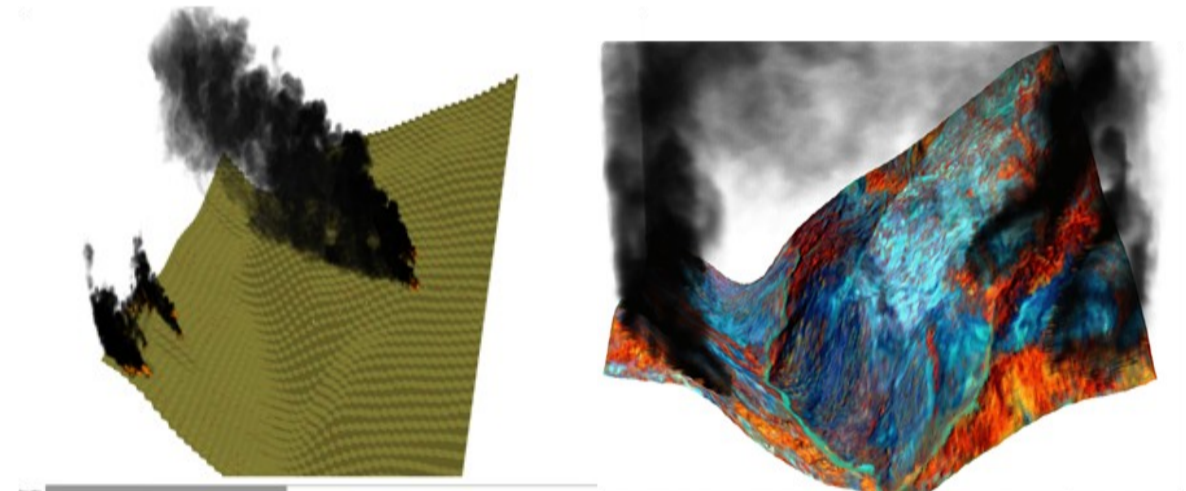
## METHODOLOGY



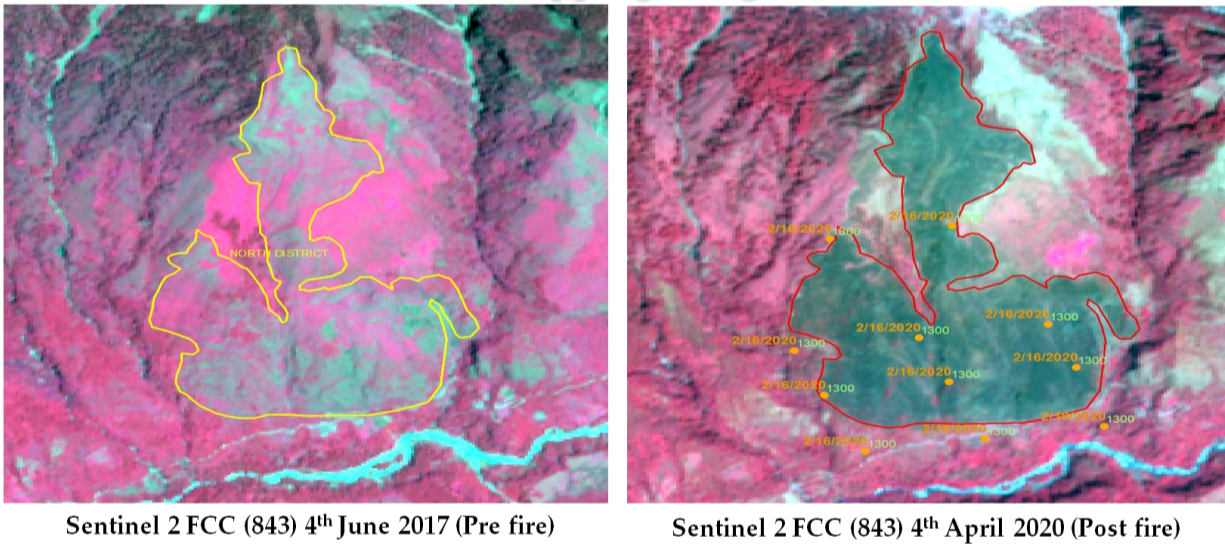
## SALIENT FEATURES

- Active fire detection by Satellites
- Automatic pushing of FSI fire alerts
- Burnt area mapping using satellite data
- Coupling of Weather, Fire and Computational Fluid Dynamics (CFD) & Non CFD models for fire spread simulation
- Localised fuel parameterisation
- Development of Software tool for forest fire spread simulation
- Fire alerts through SMS

## Forest fire spread simulation



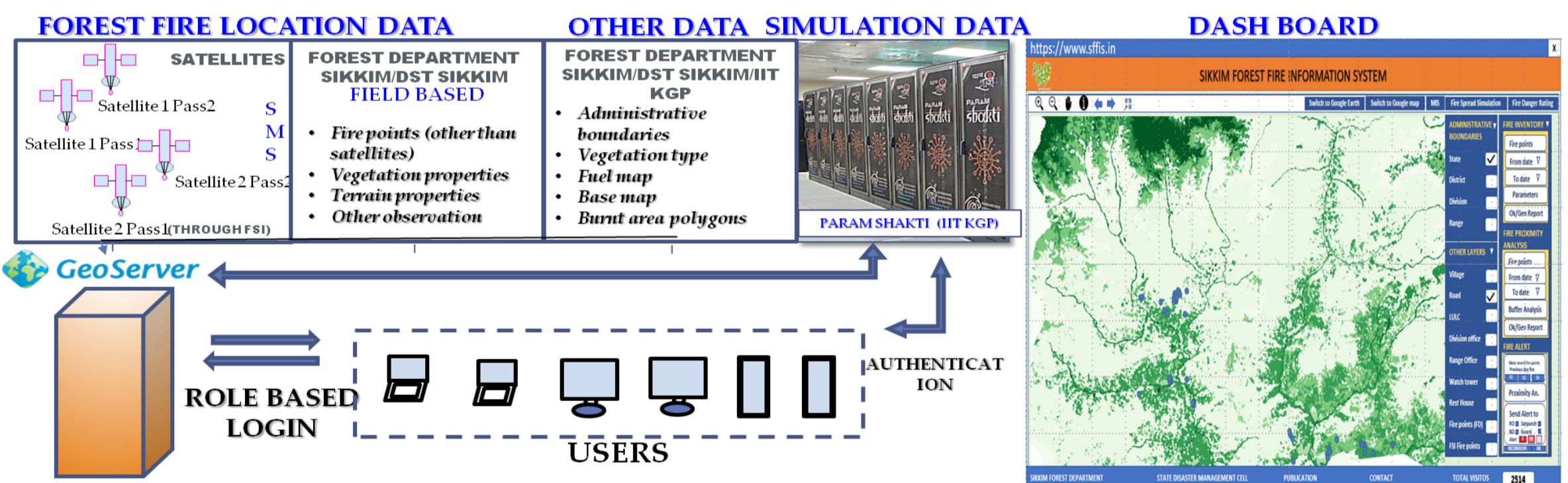
## Burnt area mapping using satellite data



## FIELD INVESTIGATIONS



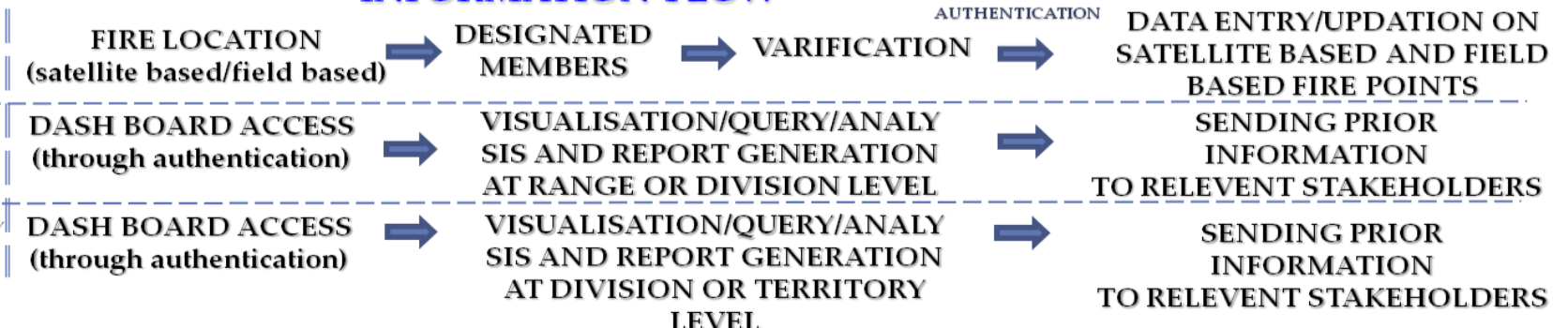
## SIKKIM FOREST FIRE INFORMATION SYSTEM



### LEVEL OF ACCESS

LIMITED	FOREST RANGE
LIMITED	FOREST DIVISION
FULL	TERRITORY

### INFORMATION FLOW



\* Source of some clipart is from internet

## USER AGENCY: FOREST AND ENVIRONMENT DEPARTMENT, SIKKIM