

## **Visualization for Integrated Simulation Systems**

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### **Summary**

The objective of this project is to develop the visualization part of the project network “Integrated Data Management, Workflow and Visualization to Enable an Integrative Systems Science”, which targets the use of workflow technology and corresponding data flow and sensor-data acquisition in order to build large simulation systems. In particular, this project addresses the challenge of providing integrated visualization of simulation and sensor data and its corresponding workflow and simulation model. To this end, novel visualization techniques need to be developed in the following areas: (i) visualization of heterogenous data; (ii) combined rendering of simulation and sensor data with intrinsic space-(time) meaning and of abstract information about the simulation workflow; (iii) uncertainty and comparative visualization in order to allow for partly unreliable data and for parameter studies; (iv) interaction methods and user interfaces that support visual exploration of the workflow. Expected benefits of this kind of visualization include effective visual analysis of complex simulations, monitoring and debugging of simulation workflows, and facilitating the understanding of such workflows and their parameters.