FACULTY DEVELOPMENT PROGRAM

SIMULATION & VALIDATION OF INTERNAL FLOW: INTERNAL FLOW IN PIPES

Date: 23th Sept 2020 to 24th Sept 2020

Resource Person

Mukundjee

Pandey

ASSISTANT PROFESSOR
MECHANICAL ENGINEERING

No. of Participants: 7

Resource Person:

Dr. Mukundjee Pandey pursuing his PhD from International Institute of Information Technology, Bhubaneswar. He is working as an Assistant Professor in the Mechanical Engineering Department at Centurion University of Technology and Management, Odisha, India. His research field includes Computational Fluid Dynamics, Finite Element Analysis, Solar Thermal systems, Solar Parabolic Trough Collectors, Solar Chimney, Thermodynamic Power Cycles, Kalina Cycle, Organic Rankine Cycle and Brayton Cycle.

About the FDP:

Individuals at this training may understand the client's business requirements and translate them into technical requirements for the technology consultants. They act as facilitators in the process of solution and development of the end product/service.

Objectives of the FDP:

Internal Flow: Internal Flow in Pipes

- To Simulation window (Simulia): How assistant is useful.

- How to create fluid with the help of regions inside the pipe.

- Boundary conditions: Why, Where, which and how to take boundary conditions.

- Meshing: Types of meshing and mesh fining.

External Flow Through Bodies

- External environment creation: Why and how to create bounding box and how to change its dimensions.
- Boundary conditions: How to create boundary conditions for external flow through bodies.
- Meshing: How to do meshing of bounding box and how to create a region space. Mesh generation and refinement for the bounding box.
- Errors: Why errors are encrypted and how to eliminate it.

Outcomes of the FDP:

- How to open the Simulation window?
- How to initialize the setup and create a fluid domain for solid sections?
- How to create fluid regions inside the pipe with the help of abstractions in the fluid domain.
- Why is the default mesh hexahedral in Simulia, what is orthogonality and skewness in mesh?
- What is a grid independence test and why is it necessary?
- How to validate CFD results and why it is important.
- Basics to start an external flow simulation like that of a wind tunnel.
- Why and how to give boundary conditions for wind tunnel simulation.
- How to generate pressure, velocity, velocity vectors and temperature contours of flow distribution.

Photographs of the FDP:
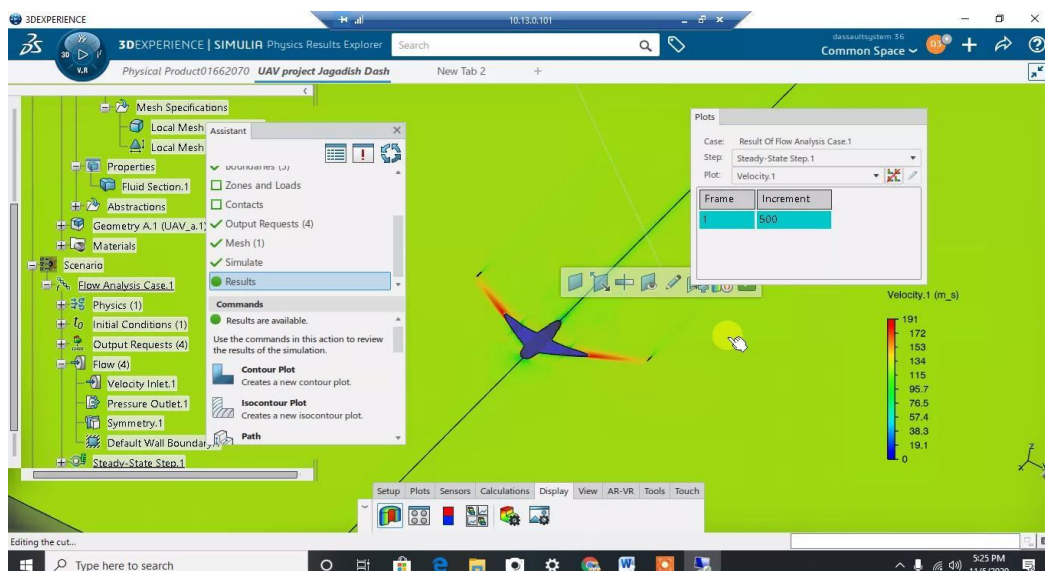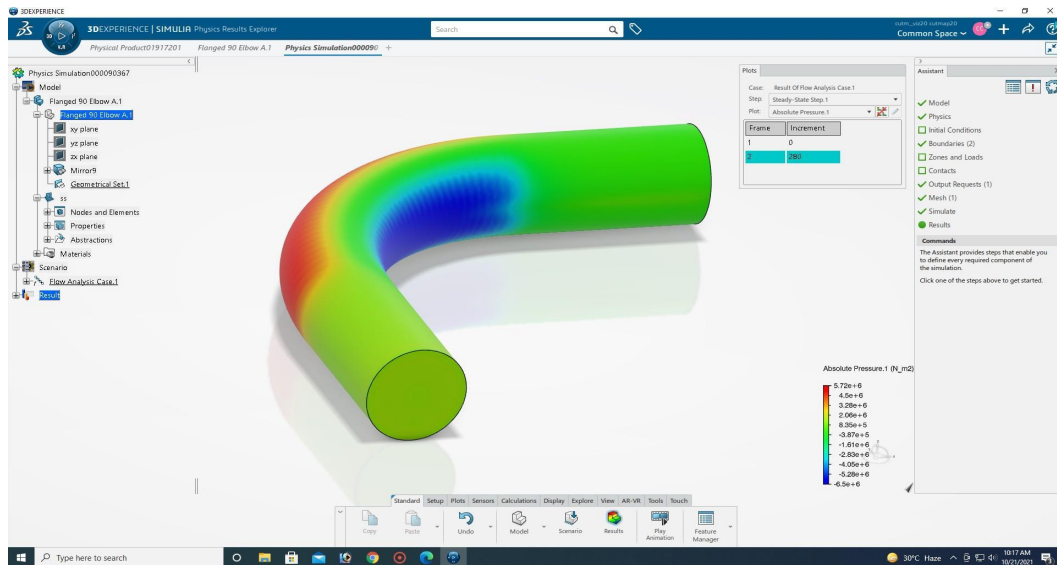
Screenshots of the on-going FDP on Simulation
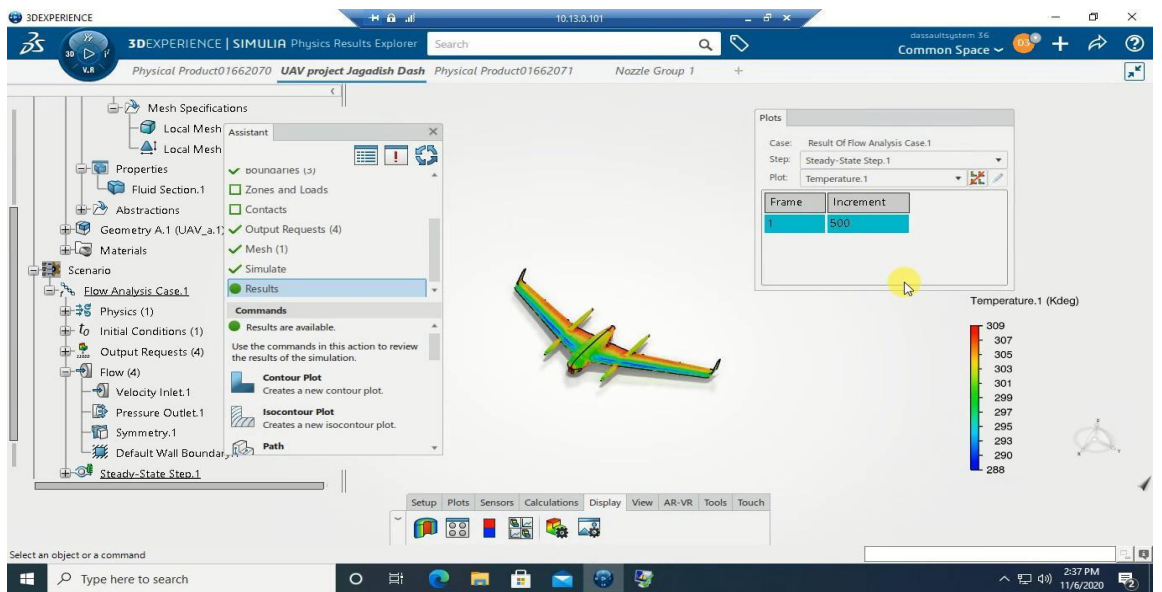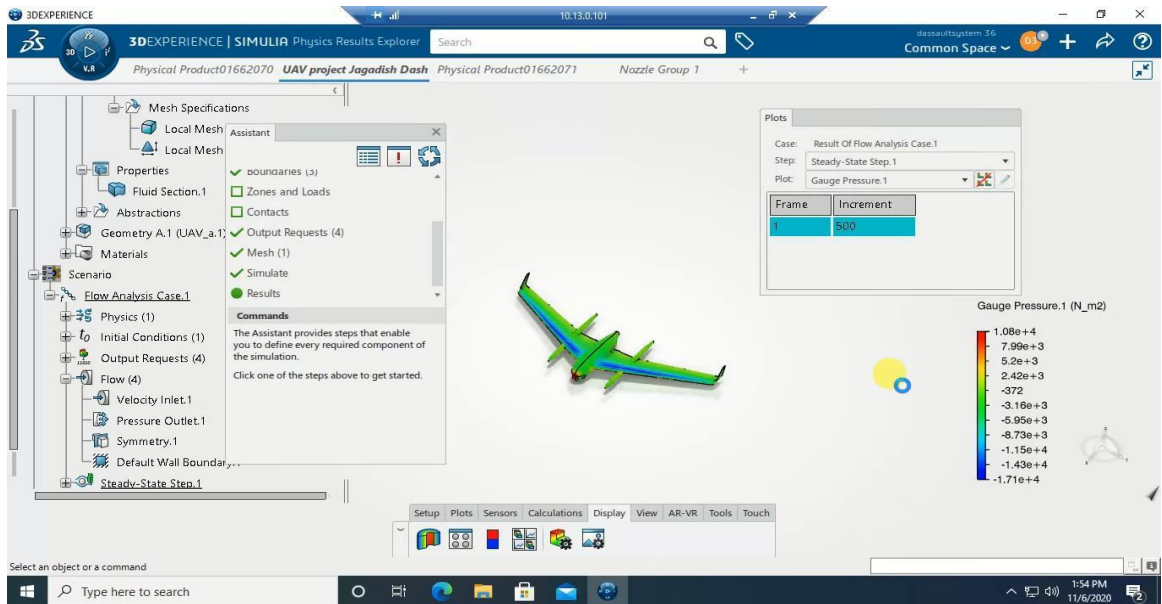
Screenshots of the ongoing FDP on Simulation

Brochure of the FDP:

WEBINAR ON

Simulation and Validation of Internal Flow: Internal Flow in Pipe

23-09-2020 to 24-09-2020

Organised by :

Centurion University of Technology and Management

Resource Person

Prof. Mukundjee Pandey
Asst. Professor
Mechanical Engineering

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Participants list of the FDP:

Serial No.	Name of Faculty	Designation
1	Dr. Ashok Mishra	Professor
2	Dr. Ramesh Chandra Mohanty	Professor
3	Dr. Goutam Kumar Mahato	Associate Professor
4	Dr. Swarnaleta Jena	Assistant Professor
5	Dr. Sashi Bhusan Padhi	Assistant Professor
6	Prof. Manas Rajan Padhi	Assistant Professor
7	Prof. Sujit Mishra	Assistant Professor

Dr. Prasanta Ku. Mohanty
Dean Academic

Prof. KVD Prakash
Dean - IIE & HRD