CAASE18
The Conference on Advancing Analysis & Simulation in Engineering
June 5 - 7, Cleveland, Ohio
Co-Hosted by NAFEMS DE Digital Engineering

Democratizing Engineering Models - Part 1

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Agenda

- Workshop Introduction
- Practical Session 1: Deploying a Spreadsheet-based Model
- Practical Session 2: Deploying a Matlab-based Model
- Summary
- Q&A

What is EASA®?

- **EASA** is a software package for creating and hosting web-accessible custom applications, EASAPs
- **EASA** is a Web-based environment with libraries of:
  1. Applications, called EASAPs, for users to access & run
  2. Results from executed EASAPs for users to examine & analyze
- **EASA** includes "**Authoring**" tools for generating a simple, yet powerful Graphical User Interfaces (GUIs) to drive an EASAP.
- **EASA** manages execution of batch submissions from EASAPs via a queuing system

EASA Applications (EASAPs)

- The custom web-based applications created and hosted within EASA are called EASAPs
  - **Authored** within EASA
  - Accessed by **Users** within EASA

- When to Create an EASAP
  - Address a recurring need for use
  - Simplify execution of a process to increase potential users and to save time
  - Ensure consistent quality through single version of process
  - Capture best practices to reduce key person dependencies
  - Minimize IT costs of deploying applications to users' desktops

Underlying Software Applications

- EASAPs interact with existing software applications as follows:
  - Databases: SQL queries
  - MS Excel: Excel specific functionality (Lecture 8)
  - Batch / Command Line / Computational software: Wide variety
    - Submitted to run on compute servers
  - Web Service Calls: Custom Actions

- Can execute software applications to run in *batch* mode on compute servers within Job Management queue
  - Software run using commands, APIs, scripts and input text files
  - NO graphical displays or mouse clicks allowed
  - Check on batch mode availability
    - It may exist, even if you don't use it

Underlying Software Applications

- Databases
  - E.g. MS Access, MS SQL Server, Oracle, MySQL, etc.
- Mathematics & Calculations
  - E.g. MS Excel, SAS, Matlab, MathCAD, etc.
- Graphing and Plotting
  - E.g. MS Excel, GNUplot, Tecplot, etc.
- Simulation & Analysis software
  - E.g. MS Excel, CAD, FEA, CFD, Process Simulation, etc.
- Legacy and In-house codes

Getting Started

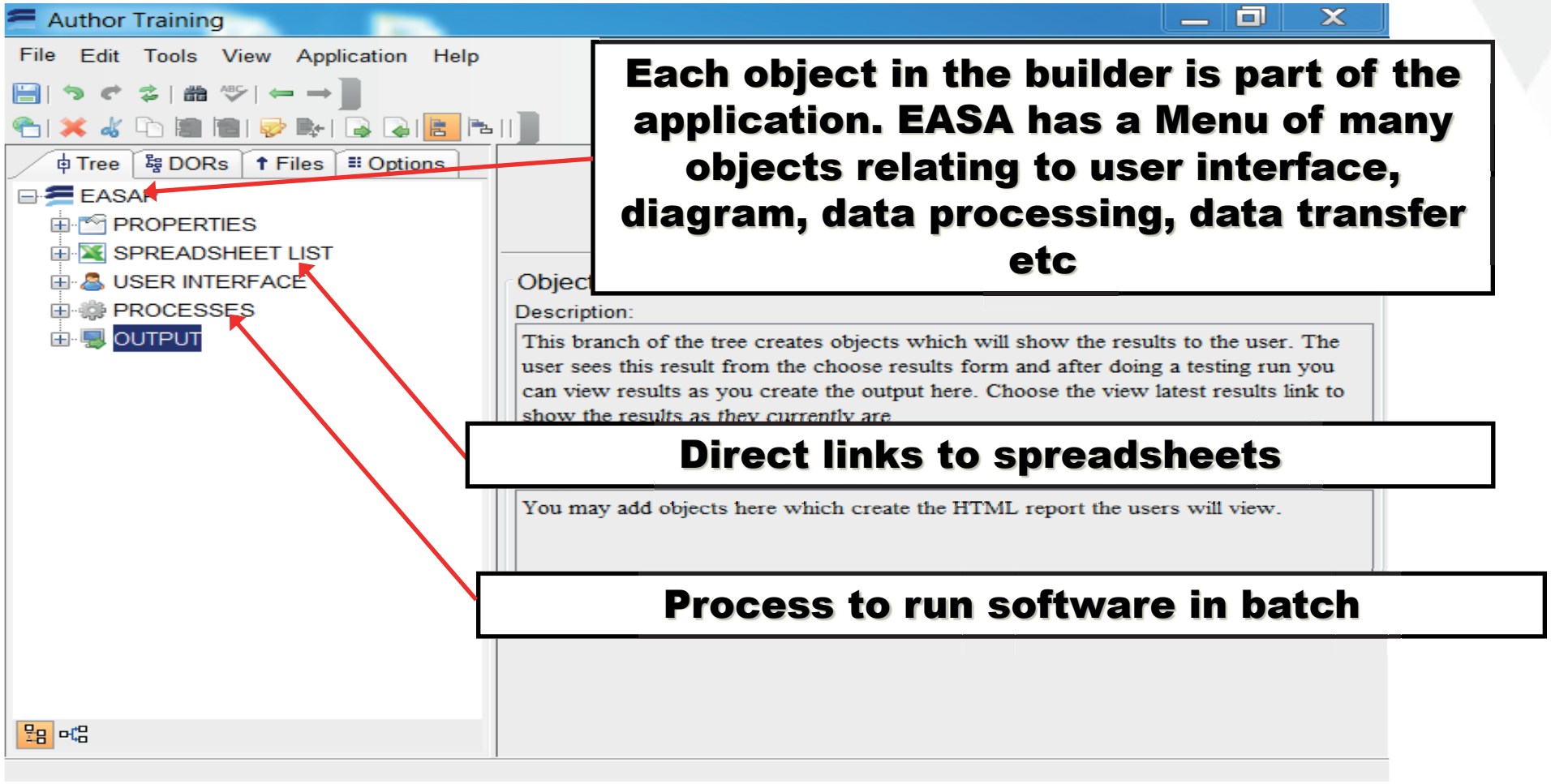
- EASA accessed via a Web address *(URL)*
  - EASA URL set by Administrator during installation
  - Form: http://<Domain_name>/easa
    - <Domain_name> →EASA Server computer name by default

- Access can be simplified by:
  - Book marking the EASA URL in browser
  - Using a link on your organization's Intranet
  - Creating a shortcut link on your desktop

- Login required to access full functionality
  - New users must contact EASA **Administrator** for User name & password (**NOTE:** Both are case sensitive)
  - Custom authentication to use your network (SSO) login available

Building EASA Applications

- EASAP Builder – fast, codeless



Practical Session 1

Deploying an Excel spreadsheet-based model in EASA

Practical Session 2

Deploying an Matlab-based model in EASA

Summary

- Basics of deploying models in EASA covered
- Hands on experience deploying two models provided
  - Flow measurement weir device design
  - Oil leak simulation
- Q&A

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Thank You!

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