

TRANSITION Project

Technical Trial - Select & Dispatch Tool
High Level Overview

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Select & Dispatch Tool (S&D Tool)

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Introduction

Background

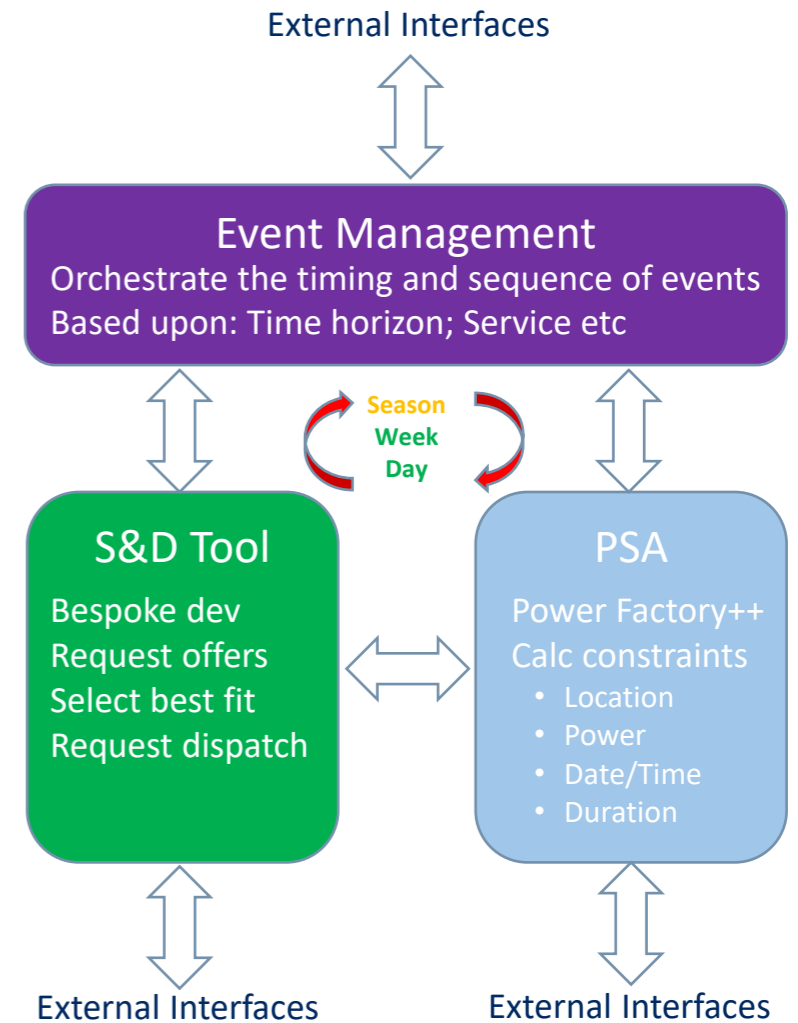
- TRANSITION Project (Network Innovation Competition)
- Current Proof of Concept
 - Not development of BAU capability
- Previous learnings
 - No need to revisit what we know already
 - Try something different
 - Embrace other supplier's experience
- Requirements capture activity
 - Requirements Traceability Catalogue (RTC)
 - Context diagrams
 - As an input into the ITT pack
- Timelines
 - ITT issued early April
 - System in service by start Jan 2023 (TP3 ends 28 Feb 2023)
 - Three month trial period

Objectives - what are we trying to achieve?

- Testing the end to end process for flexibility by:
 - Incorporating short term operational forecast & topological datasets
 - Calculating constraints on the network
 - Advertising for offers to resolve constraints
 - Receiving and assessing offers
 - Validating offers and sensitivity factors
 - Requesting dispatch(s)
- Using these services:
 - Sustain Peak Management SPM (including Export)
 - Secure Constraint Management SCM
 - Dynamic
- Across these time horizons:
 - Season, Week, Day** (Initial focus on Week and Day)
- Not testing:
 - Within day time horizon for procurement process
 - MIC/MEC services
 - Financial settlement process for Participants
 - Baselining of measured utilisation data
 - Edge cases (events that fall outside of the normal expected behaviour)

Context Diagram - where does it fit in?

- Select & Dispatch Tool
 - Service type agnostic
 - Doesn't do anything without a trigger
 - Issues requests for offers based on inputs
 - Receives and processes valid offers/contracts
 - Determines best contract(s)
 - Records sensitivity factors
 - Requests dispatch(s)
- Power Systems Analysis (Power Factory++)
 - Not just Power Factory
 - Additional scripts and spreadsheets (where required)
- Event Management (Manual processes)
 - Manages the timing and sequence of events
- Swivel chair interfaces
 - Existing automated interfaces to be used where viable



High Level Requirements

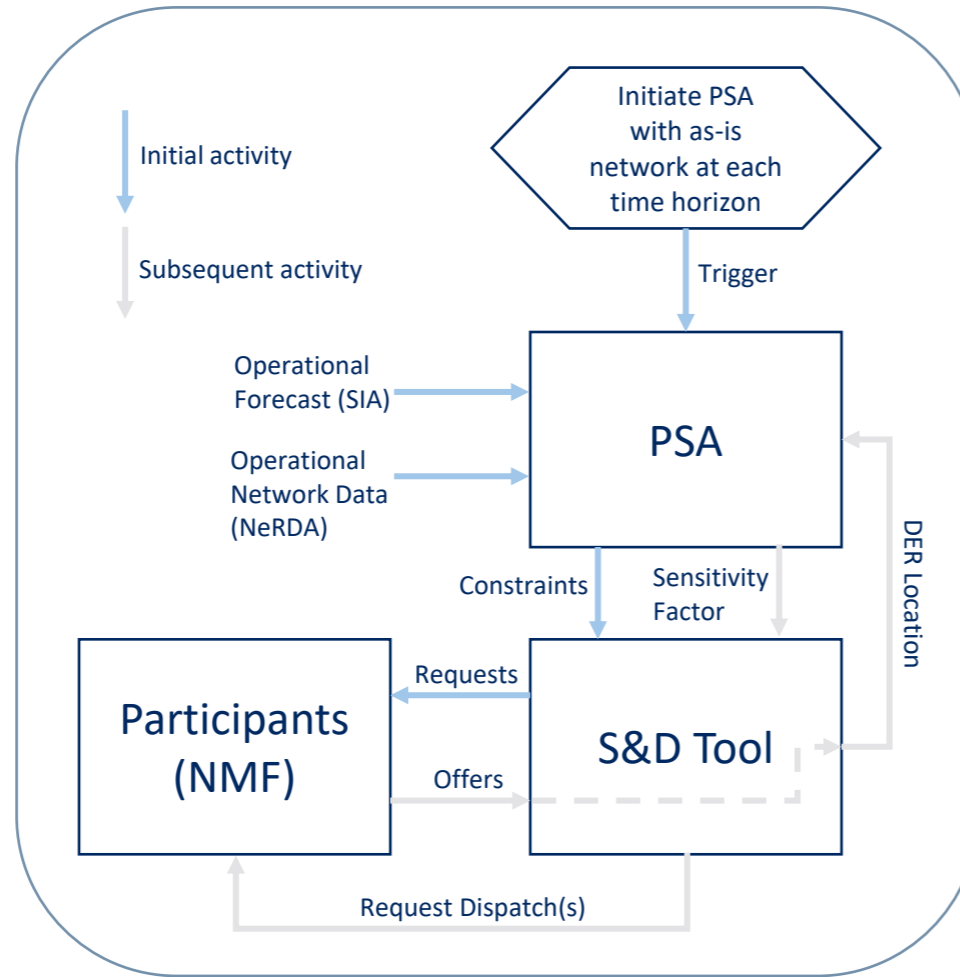
Build upon these key areas

- Doesn't do anything by itself – Triggered by Event Management
 - Requires stimulus (inputs) – Manual and/or automatic
 - Produces outputs – Manual and/or automatic
- Issues requests for offers based on inputs
 - Inputs from PSA based upon time horizon and service required
 - Includes BSP location (and market membership), date/time, duration, and power amount
- Receives and processes valid offers/contracts
 - Only interested in 100% valid offers, based on service window, all others rejected
 - Partial kW offers allowed
- Determines “best” contract(s)
 - Will rank and accept offers based on cost(s), sensitivity factor, and available kW
 - Sensitivity factor is a value determined by PSA that indicates the likely impact on the network of the dispatch of a DER
- Requests dispatch(s)
 - Will dispatch on basis of “best” first, and work down the list as required
- Recorded all aspects of the process for data export and reporting purposes (Excel etc)

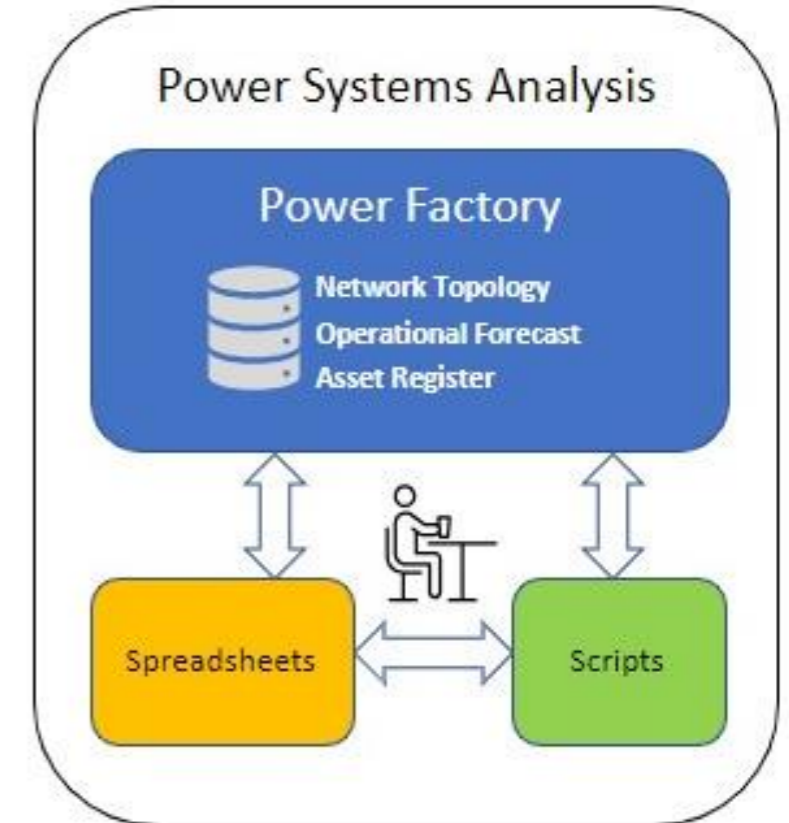
High Level Requirements

Build upon these key areas

S&D tool Interactions



PSA Elements



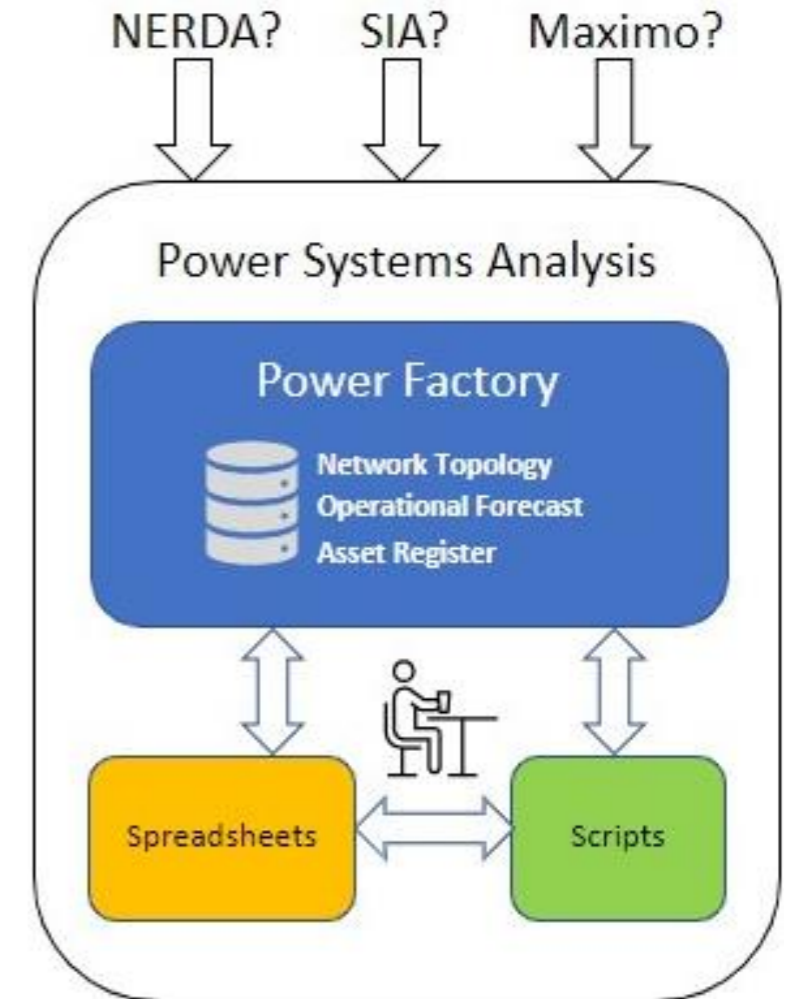
High Level Requirements Interfaces to PSA

- Request for constraint creation, based on:
 - Inputs: Time horizon (Week, Day), Service (Secure Peak (including Export), Sustain, Dynamic)
 - Output: Where (BSP), When (Date/Time), How much (kW), How long for (Hours/Mins)
- Calculate sensitivity factor, based on:
 - Input: Offer received from Participant (treated in isolation)
 - Output: Sensitivity factor
 - Note: Existing contracts included in calculation
- Calculate constraint resolution:
 - Input: Offer(s) from Participants (potentially multiple offers)
 - Output: Reduced kW overload to 0 (Constraint resolved)
 - Note: Existing contracts included in calculation

PSA Overview

High level context and functionality

- PSA is not just Power Factory
 - Potentially includes additional scripts and spreadsheets as required
- Manual and automated interfaces (where applicable)
- Responsible for maintaining up to date network topology, operational forecast, asset register, and anything else it needs to complete its function
 - Calculate constraints
 - Calculate sensitivity factors
 - Calculate if selected offers reduce kW overload to zero?



Summary

Simple and effective standalone solution

- S&D Tool is standalone from other systems
 - Interfaces to PSA and Event Management function
 - Manual and automated (where applicable)
 - Maintains records of:
 - Constraints
 - Requests for offers
 - Offers received
 - Sensitivity factors
 - Offers accepted/rejected (Contracts)
 - Instructions to dispatch
- Agnostic of service type and time horizon

Q&A Session

For more information or to access our extensive learning reports; please visit www.ssen-transition.com

