

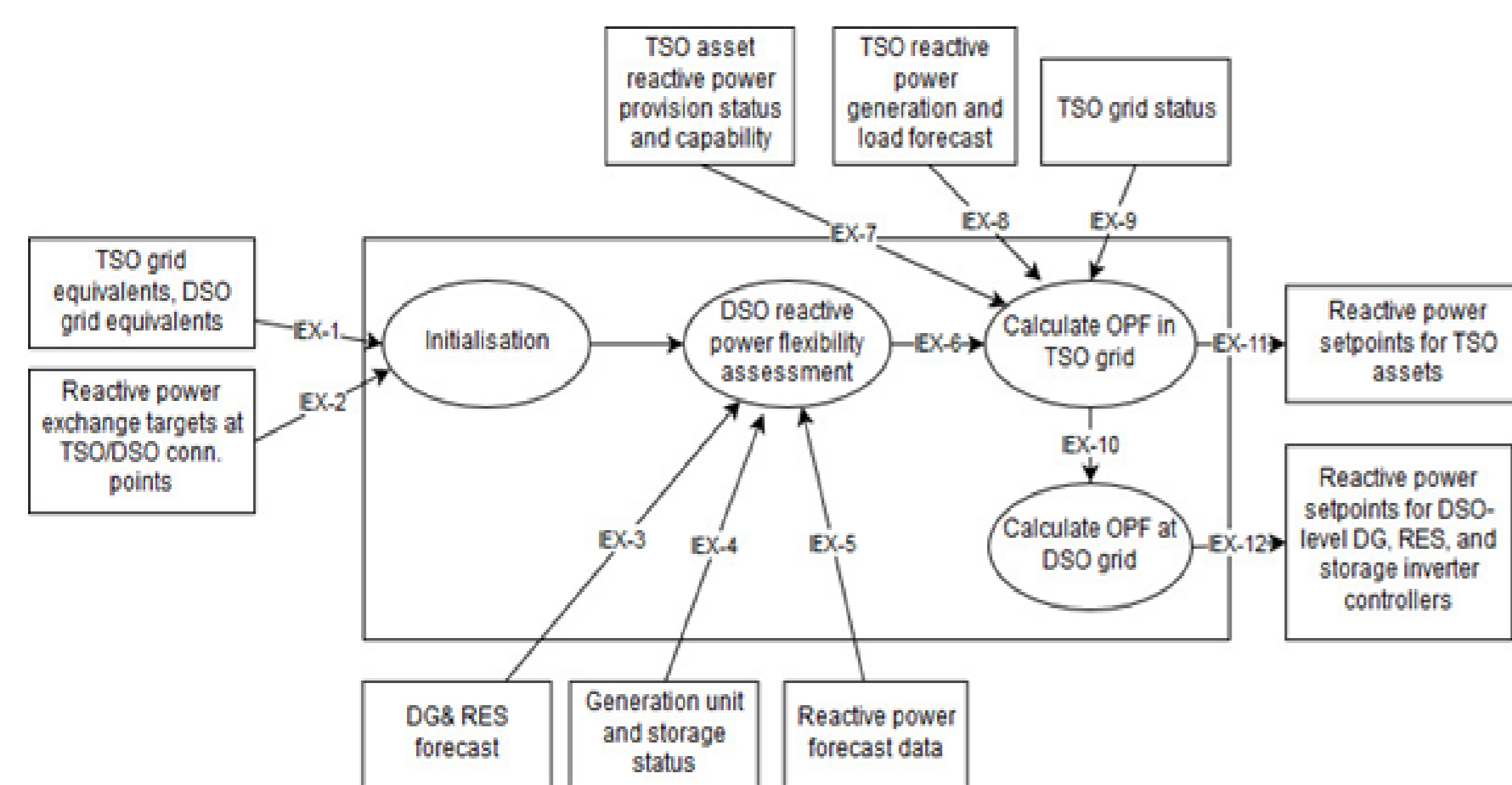
INNOVATIVE GRID OPERATION PLANNING TOOL FOR THE SYSTEM OPERATORS

INTERPLAN project is aimed to provide an INTEgrated opeRation PLANning tool towards the pan-European network, to support the EU in reaching the planned low-carbon targets, while maintaining network security. INTERPLAN will provide a methodology for a proper representation of a “clustered” model of the pan-European network, with the aim to generate grid equivalents as a growing library able to cover all relevant system connectivity possibilities occurring in the real grid, by addressing operational issues at all network levels including transmission, distribution and TSOs-DSOs interfaces.

The Tool Use Cases

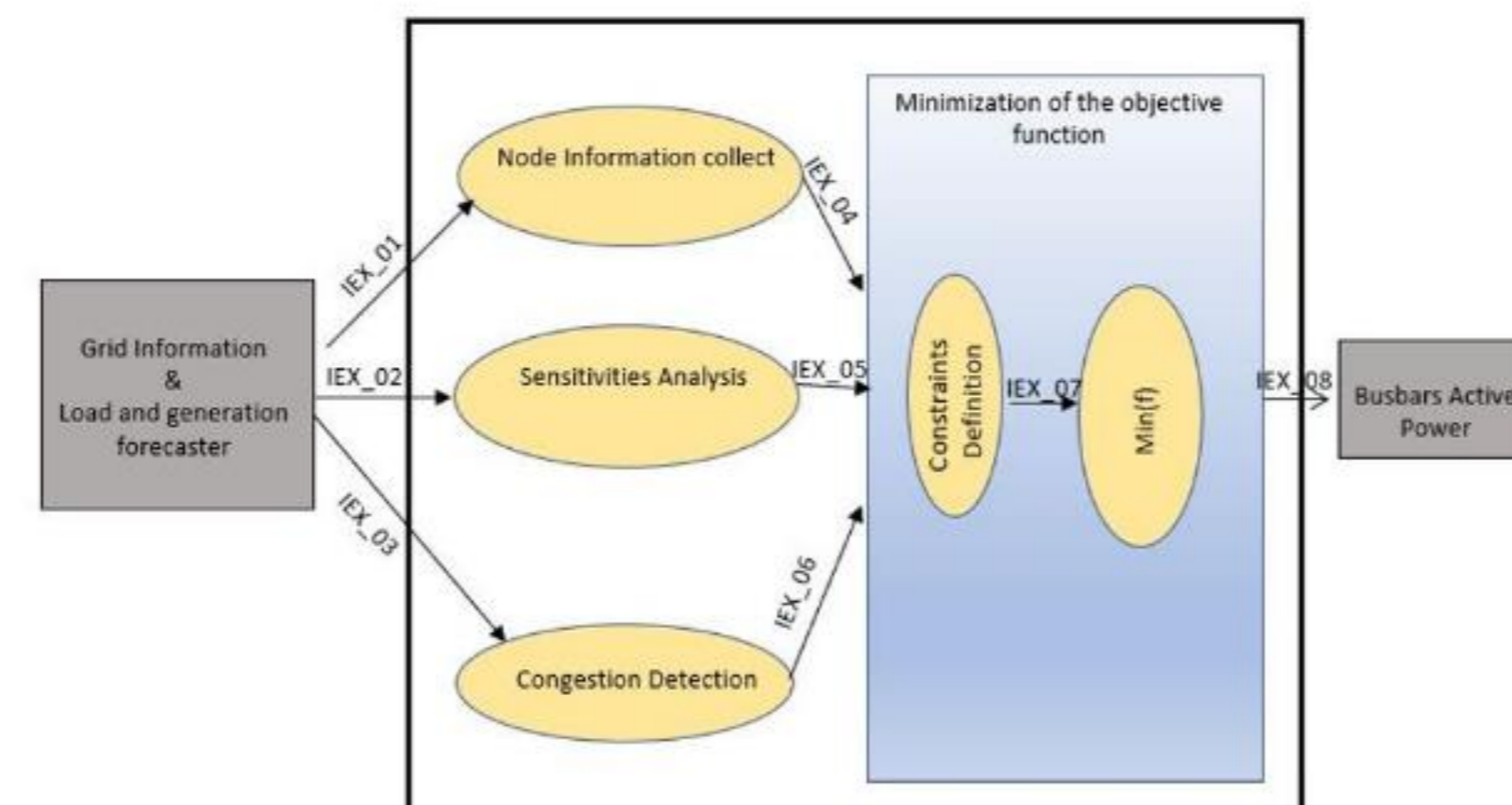
Use case 1: Coordinated voltage/reactive power control

Utilizing reactive power capacities of RES and DER to increase the hosting capacity and to improve voltage profiles both in transmission and distribution grids



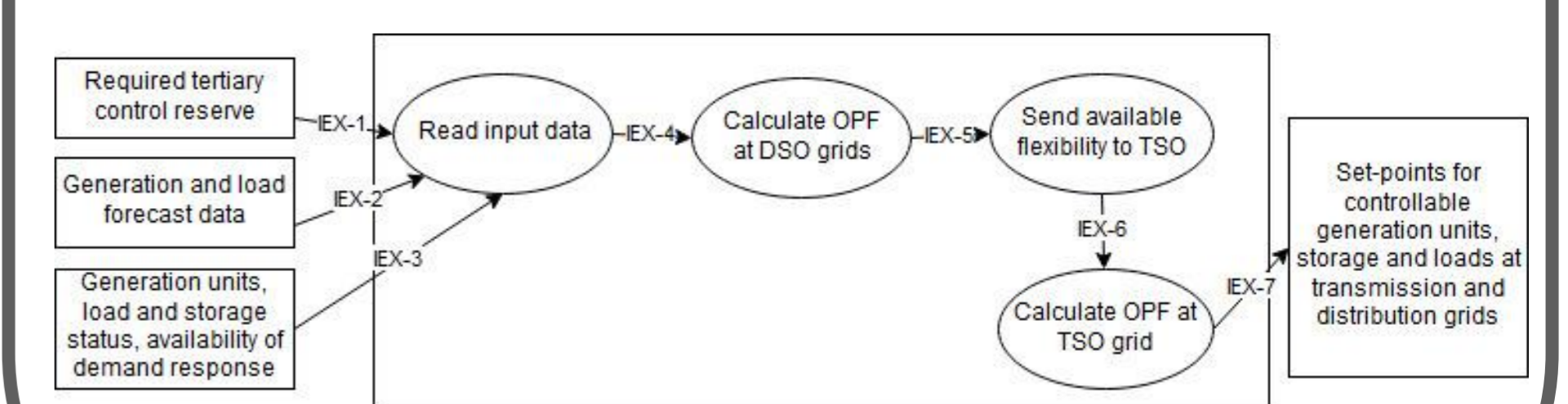
Use case 2: Grid congestion management

Mitigating and avoiding grid congestion problems at both distribution and transmission levels by operating on the available controllable resources (e.g. storage, load shedding, EVs, DG, etc.).



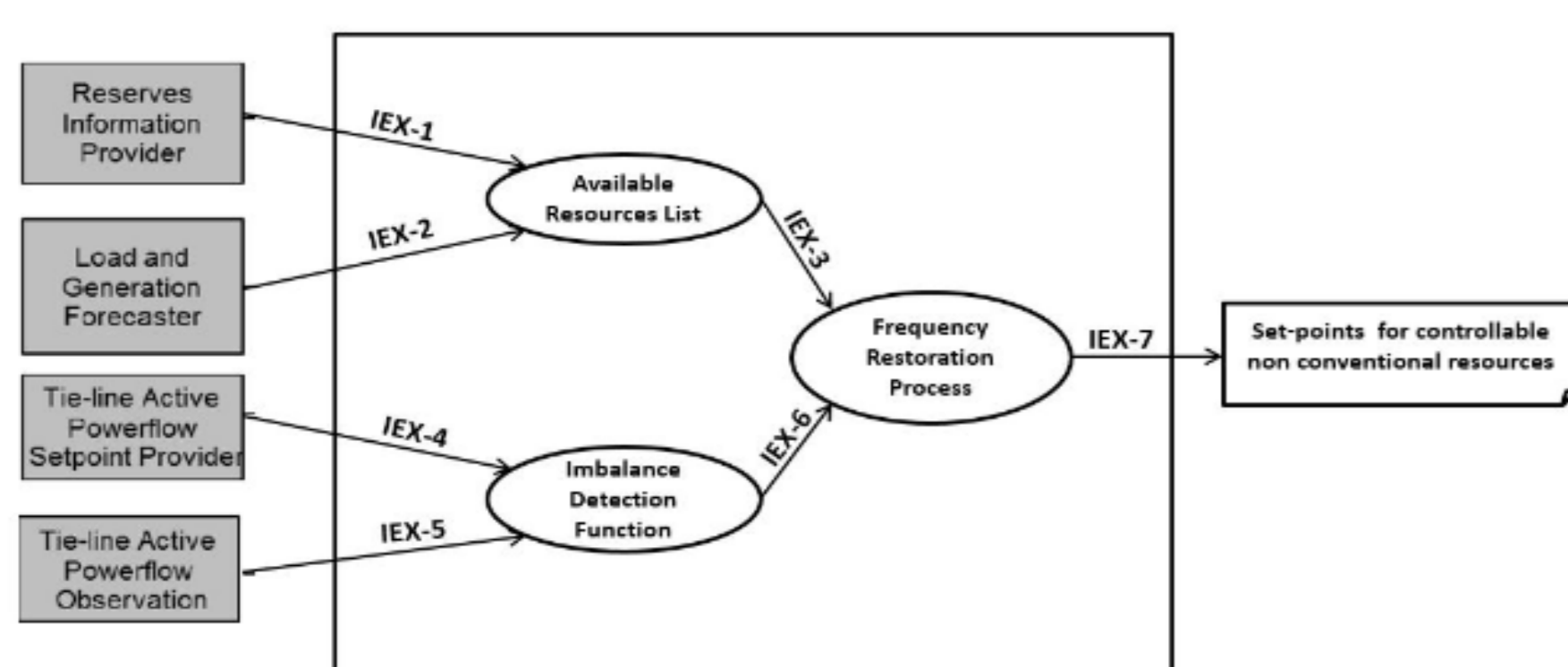
Use case 3: Frequency tertiary control based on optimal power flow calculations

Improving frequency stability tertiary control based on optimal power flow calculations and involving as much as possible the flexible RES available at both transmission and distribution grids



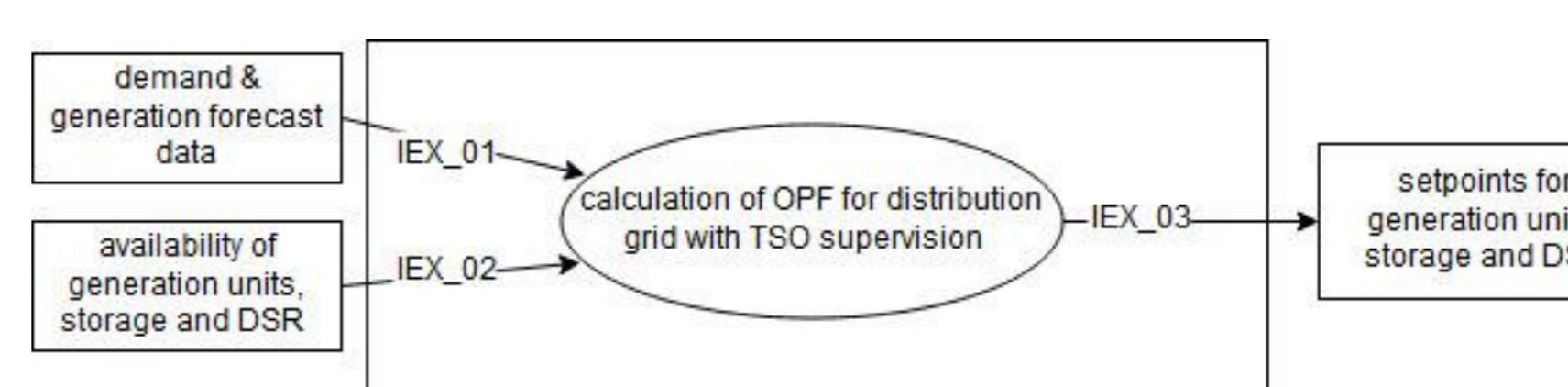
Use case 4: Fast Frequency Restoration Control

Fast frequency restoration control based on the use of local fast ramping resources (e.g., RES, storage units, flexible loads) and through TSO-DSO collaborative interaction



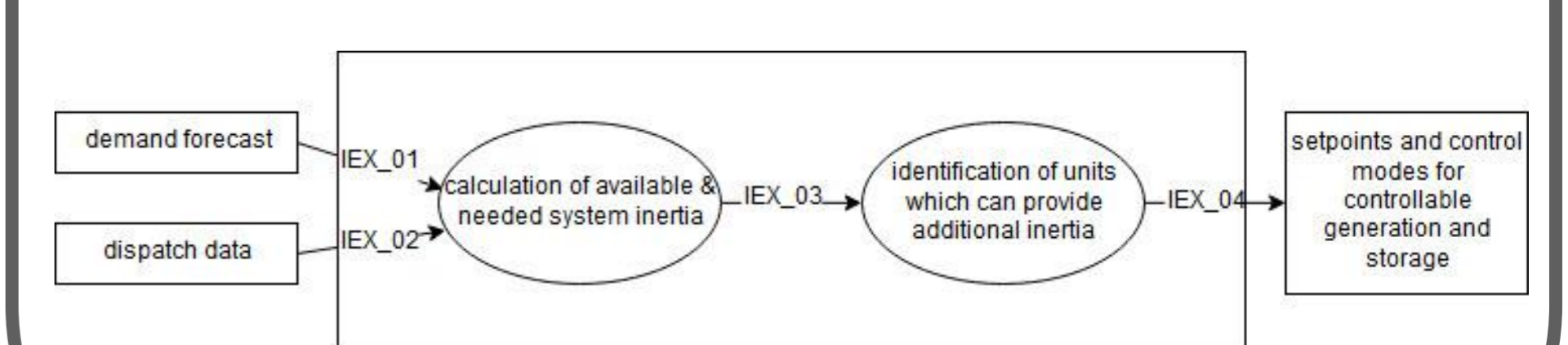
Use case 5: Power balancing at DSO level

Optimization of power balancing at DSO level by optimizing the local available flexible and/or controllable resources (DG, Storage, Demand Response, etc.) in order to manage the exchange profile in the HV/MV substations



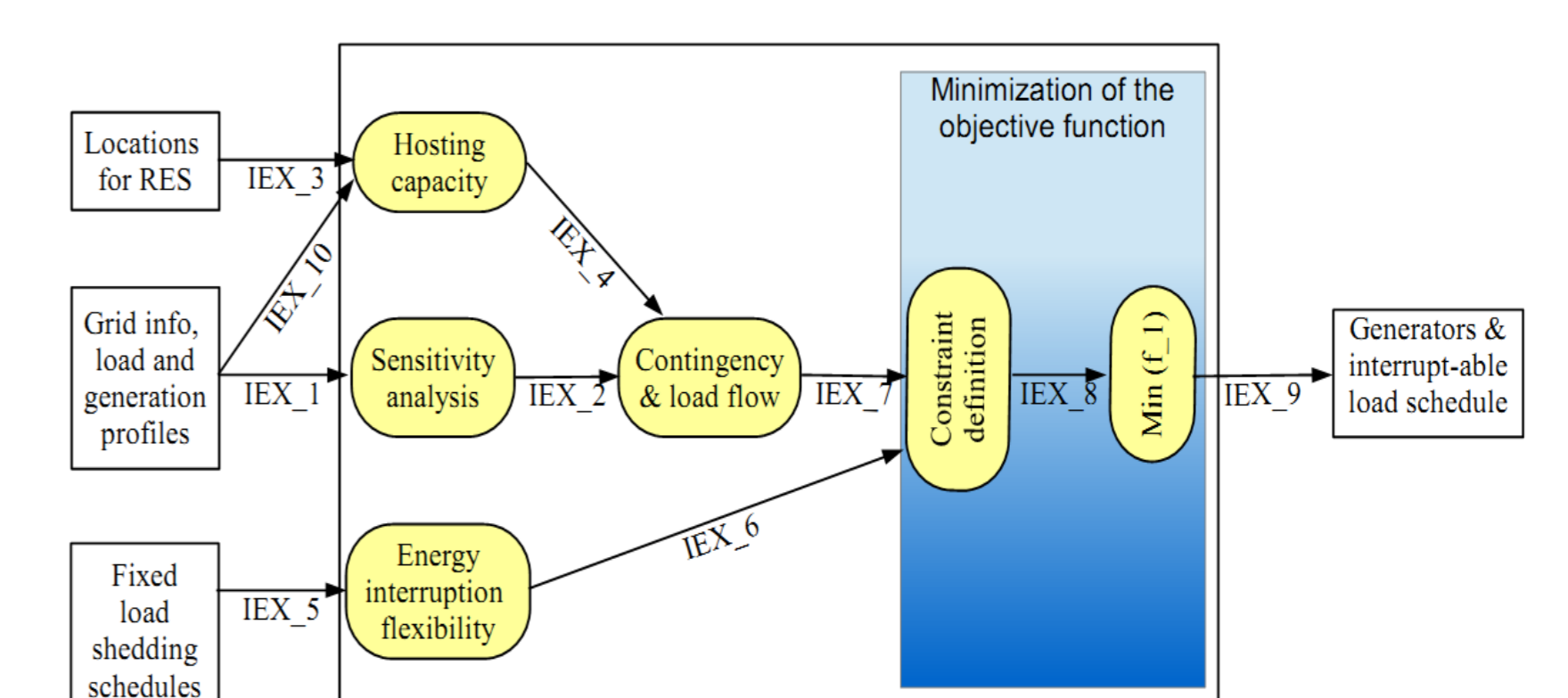
Use case 6: Inertia management

Developing an approach for inertia management using additional control including synthetic inertia and fast frequency response in systems with significant RES penetration resulting in low inertia



Use case 7: Optimal generation scheduling and sizing of DER for energy interruption management

Securing the continuity of supply to improve system reliability and minimize energy interruptions for a given set of contingencies while maximizing the share of RES in the network



INTERPLAN

INTEgrated operation PLANning tool towards the pan-European network

Duration

1 November 2017 – 31 October 2020

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Partners



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