

Why the review is important?

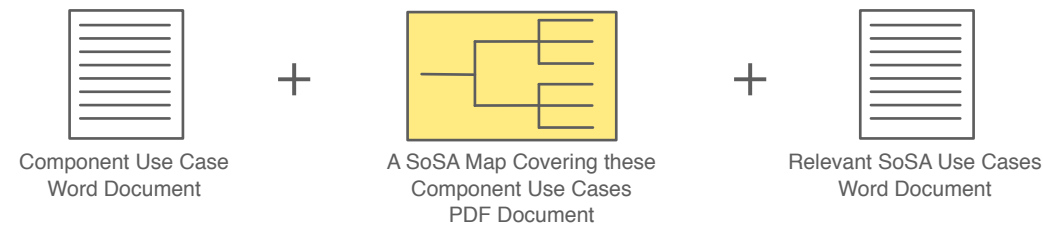
ERCOT has created the System of Systems Architecture (SoSA) to identify and define all interactions with the Nodal systems. SoSA is comprised of Use Cases that describe how the Nodal Systems will work at the Enterprise and System levels. Nodal projects are now creating Component level Use Cases that elaborate how each Nodal system will fulfill the requests identified in the System Use Cases.

Together, these three tiers of Use Cases provide a holistic view of the Nodal architecture, and details how each system behaves and interacts to meet the Nodal protocols.

What you can expect to receive?

The package that the TPTF will receive will contain: 1. component level use cases from each Project, 2. a SoSA Map tying Component Use Cases to System Use Cases, which in turn link to Enterprise use cases. The mapping will provide insight on how Component Use Cases from projects fit into the System of Systems Architecture, and will reveal gaps that may exist. These Component use cases are reviewed by both ERCOT Business owners and the Nodal IDA team to ensure that they address business needs, and are consistent in quality.

The package will be posted to the "Working Documents" section of the Nodal Website: nodal.ERCOT.com.



How your review will help us?

Please go through the whole SoSA Map when reviewing the Component Use Cases. Check that everything you think should be covered is and that the linkages make sense. Help us improve the model by letting us know of any gaps you find. Help us improve our communication by letting us know where a Market – ERCOT interaction is different from your expectations or is unclear. Your comments are valuable and essential in helping us evolve this critical asset.

How to present your feedback?

Please send all your comments through email to the TPTF Support Personnel – Carrie Tucker (CTucker@ercot.com), so that she can forward the comments to the relevant Project and the IDA for review. The Projects will then review the comments and incorporate them into the Use Cases where appropriate. The IDA will work with the Project teams to ensure that any potential gaps are addressed in the Use Cases and ensure that SoSA architecture is complete.

Next Steps

We are creating a calendar of Use Case submissions to the TPTF to ensure that the workload on TPTF is uniformly distributed. We will be posting the calendar on the Nodal website in the 2nd half of April.

Use Case Check List

1. Do you understand how each use case fits into the picture of MP – ERCOT interactions?
2. Do the use cases cover all of the expected MP interactions with ERCOT (breadth of coverage)?
3. Do the use cases form a complete detailed picture of Market – ERCOT interactions (depth of coverage)?
4. Do the use cases form a coherent picture of MP – ERCOT interactions (integration)?
5. Do the use cases suggest meaningful tests?

What is the purpose of this booklet?

1. Explains what "Component Use Cases" are
2. Describe the "SoSA Map"
3. Suggest how you can best review the Component Use Case "package"

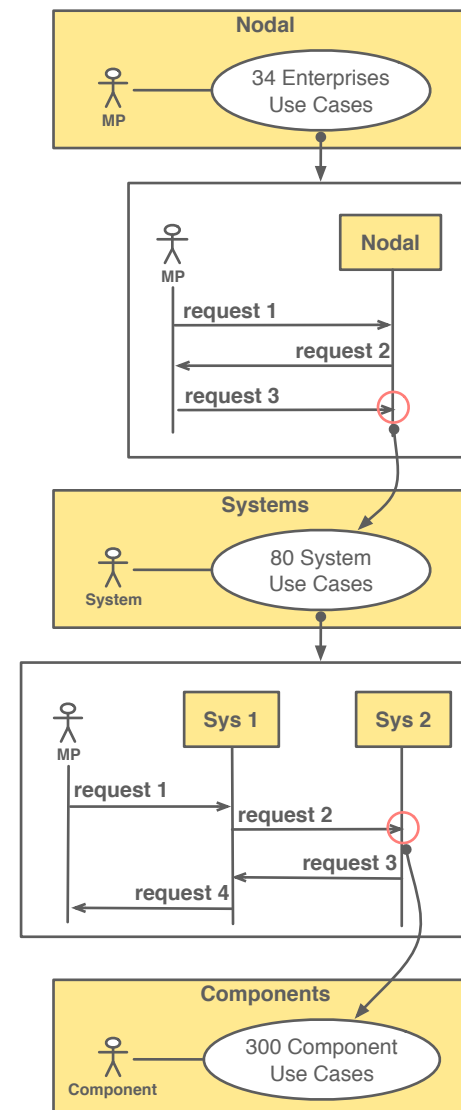
Taking SoSA to the next level – Component Use Cases?

The System of Systems Architecture (SoSA) is a technique for modeling a complex system that is itself comprised of complex systems. We have previously identified Use Cases at the Enterprise and System levels, where the "Enterprise level" viewed all of ERCOT (users and systems/applications) as one black box called "Nodal", and the "System level" decomposed Nodal into several black boxes within Nodal (e.g. NMMS, EMS, MMS, CRR, etc.) called "Systems". (Note that although these black boxes are called "Systems", they still include both users and systems/applications.)

Nodal projects are now creating Use Cases that elaborate the next level of detail: the "Component level", which describes how "Components" (several black boxes within each System) interact. These Use Cases are called the Component Use Cases. Note: This is the level where we first see the distinction between a system/application and its user.

Together, these three tiers of use cases provide a holistic view of the entire Nodal architecture, and detail how each system behaves and interacts to meet the Nodal Protocols.

The diagram below shows how these Component Use Cases are an elaboration of the overall SoSA model.



Enterprise Use Cases

The Enterprise Use Cases describe the top level services (Use Cases) that Nodal provides to the Market and other external entities (Actors).

Black Box Sequence Diagram

The Black Box Sequence Diagrams take the Enterprise Use Case and represents it as a series of requests between the entities mentioned in the specification. It covers the Main Success Scenario and all of the Alternate Flows.

System Use Cases

Each request of Nodal in the Black Box Sequence Diagram forms the basis of a System Use Case. The System Use Case describes the steps required to fulfill the that request by identifying the interactions between each of the systems.

White Box Sequence Diagram

Each Use Case has a White Box Sequence Diagram that documents the flow of requests between System components and the external Actor. This flow shows the collaboration of Systems required to meet the objectives of the initiating request. The White Box Sequence Diagram is similar to the Black Box Sequence Diagram but instead of being based on an Enterprise Use Case, it is based on the System Use Case.

Component Use Cases

Each request made to a System in the White Box Sequence Diagram forms the basis of a Component Use Case. The Component Use Case describes the steps required to fulfill the that request by identifying the interactions between each of the components in the system.

Naming Convention

The naming convention reflects the flow from Enterprise Use Cases, to System Uses Cases then to the Component Use Cases. This naming convention, along with the corresponding SoSA Map, allows you to put each of the Projects Component Use Cases in the context of the complete Nodal implementation. The diagram below shows the syntax of the naming convention and how it relates to the SoSA Map.

SoSA Map

The SoSA Map shows puts the Component Use Cases in context of the Enterprise Model. When Component Use Cases are presented for review IDA will provide a SoSA Map showing how each component use case fits into the overall SoSA model. This will allow the reviewer to see the systems involved with each overall use of Nodal and how the functionality is distributed between the participating systems.

