



reusable in multiple vehicle models or even platforms. VSA COM Designer supports the user in this complex task by allowing the specification of an acceptable change level for each ECU, which VSA COM Designer then enforces. For example, an ECU is completely fixed (no change at all) or extendable, meaning that new signals/frames cannot be modified. Post-build configuration is also supported in the system design level.

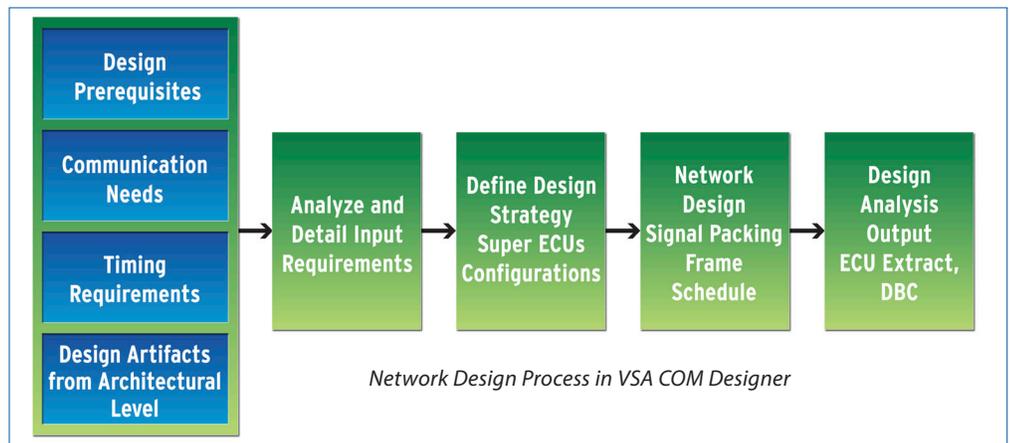
Additionally, the VSA COM Designer allows management of ECU variants as so-called “Super ECUs,” which reduces design maintenance effort and ensures consistent network design of all ECU variants. This is achieved by allowing the user to work in a 150% view of the project. Later, VSA COM Designer reduces the configuration data to exactly what is required for each individual ECU variant.

### Inputs and Outputs

VSA COM Designer uses AUTOSAR system descriptions as input, bringing in the objects relevant for communication, such as ECU topology, system signals, etc. Once the design is completed, VSA COM Designer provides exports in various formats, such as AUTOSAR ECU extract, DBC, FIBEX, and LDF.

### Typical Steps in Designing Automotive Networks

- Define a system using Volcano VSA or other system design tool. This step includes definition of ECUs, software components, topology, timing requirements, etc.
- Define change constraints for carry-over ECUs and previous network designs
- Design a strategy definition that includes Super ECUs



- Design an initial communication matrix based on requirements and constraints
- Design analysis and validation steps per requirements
- Refine the network design
- Generate output: AUTOSAR ECU extract, DBC, LDF, FIBEX, etc.
- Generate reports, with configurable layout and formats

VSA Com Designer supports a contract-based development methodology suitable for projects in which multiple companies at geographically dispersed locations cooperate. This is typical in automotive projects.

### Options

Mentor Graphics offers synthesis options to the VSA COM Designer for each supported protocol. These provide an additional level of automation to the design process.

- Automatic signal packing
- Automatic frame parameter definition and scheduling
- Automatic gateway routing

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