

UCM (Update and Configuration)

FUNCTIONAL OVERVIEW:

Update and Configuration Management has the responsibility of installing, updating and removing :-

- ❖ Adaptive Applications.
- ❖ the AUTOSAR Adaptive Platform itself, including all functional clusters and the underlying POSIX OS and its kernel.

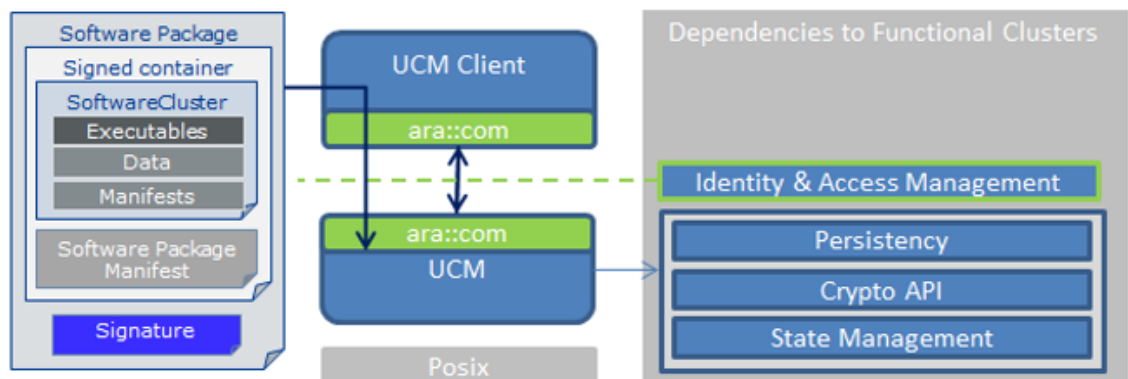
BY :

- Version reporting of the software present in the AUTOSAR Adaptive Platform.
- Receiving and buffering software updates.
- Checking that enough resources are available to ensure a software update.
- Performing software updates and providing log messages and progress information.
- Validating the outcome of a software update.
- Providing rollback functionality to restore a known functional state in case of failure.

UCM dependencies to other Functional Clusters.

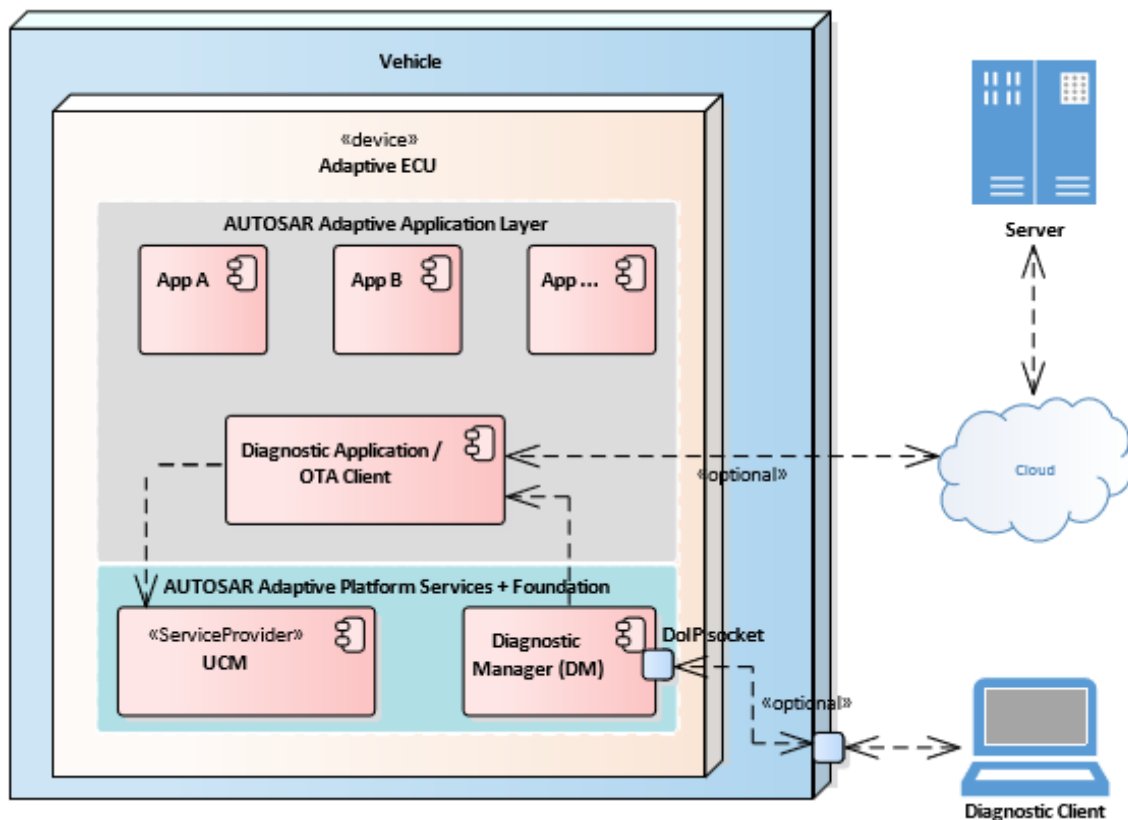
Why do we need Dependencies.....?

- The UCM receives a locally available software package for processing, The software package is usually downloaded from the OEM backend. The download of the software packages has to be done by (another application) ,i.e. UCM does not manage the connection to the OEM backend.
- Communication Management uses (Identity and Access Management) to validate the authorization of requests made to UCM's service interface Package Management.
- There is not any mechanism for the confidentiality protection as well as measures against denial of service attacks. The assumption is that the platform preserves the integrity of parameters exchanged between UCM and its user ,UCM uses (Crypto Interface) for AUTOSAR Adaptive Platform to verify package integrity.
- Certain applications can conflict with the update process or the newly updated package, and they need to be stopped during the update process. This could be achieved by putting the machine to a safe Machine State, for example (Update State) .The application accessing the UCM, should make sure that the platform is switched to this state (using interfaces from (State Management), before starting the update.



Technical Overview:

- UCM will expose its functionality via **ara::com** service interfaces, not direct APIs. This ensures that the user of the functional cluster Update and Configuration Management does not have to be located on the same ECU.
- The service interface has been primarily designed with the goal to make it possible to use standard diagnostic services for downloading and installing software updates for the AUTOSAR Adaptive Platform. However, the methods and fields in the service interface are designed in such a way that they can be used in principle by any Adaptive Application (**particular UCM does not expose diagnostic services**)
- **The UCM Client** abstracts the use case from the UCM and forwards the data stream and sequence control commands to the UCM, **The UCM Client** is used to cover both roles: **Diagnostic Application and OTA Client**.



Update Prcoess:

