SmartHMA

Work plan in WP3 - Software Architecture Design

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WP3 objectives

Workpackage description
Software Architecture Design

- WP3 will describe the **basic system design** for the SmartHMA software to be made during the next phases of the project.
- It will present also the **physical model** of SmartHMA as a decomposition of the software into components.
- Each component will include implemented standards in terms of its external interfaces, the dependencies on other components, and data flow between services provider and HMA architecture in order to allow the programmers in the next phase of the project to work in parallel.
- **Timeline** – Start T0+3 -> End: T0+8 (5 months)
- **Outcome**: Software Design Document (SDD),

  Software Component Description (D3101)

WP 3100 description
Mobile Client Architecture Design

- Responsible: Wasat
- Design of client architecture with modules for data presentation.
- Design and definition of SmartHMA UI
- Design data storage and cache modules
- Definition of internal data protocols
- Design of interfaces between internal system modules

WP 3200 description
Receiving Components Architecture Design

- Responsible Spacebel
- Identification of external interfaces compliant with HMA standards with SmartHMA architecture.
- Description of OGC and HMA compliant interfaces between SmartHMA application and backend services (e.g. DAIL/SSE, HMA-S TestBed , FedEO, DREAM and ESE).
- Contribution to design of modules architecture for EO data gathering and presentation.
- Contribution to definition of mobile client modules for data distribution between client and service provider in terms of review and comments on WASAT draft document D2.
- Contribution to external interfaces description

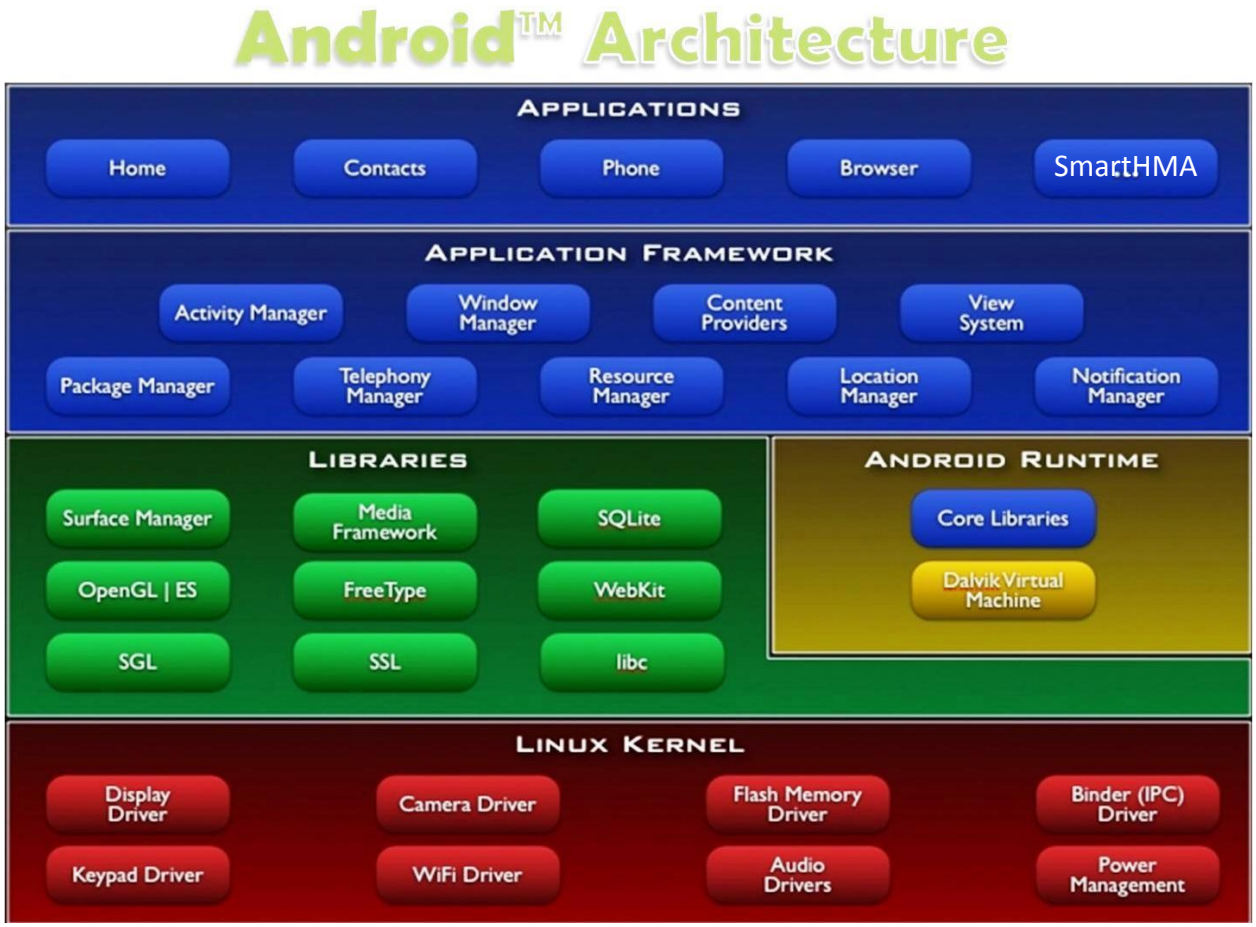
Android components

There are four different types of app components. Each type serves a distinct purpose and has a distinct lifecycle that defines how the component is created and destroyed.

- **Activities** - an activity represents a single screen with a user interface.
- **Services** - a service is a component that runs in the background to perform long-running operations or to perform work for remote processes. A service does not provide a user interface
- **Content providers** – a content provider manages a shared set of app data.
- **Broadcast receivers** - a broadcast receiver is a component that responds to system-wide broadcast announcements. More commonly, though, a broadcast receiver is just a "gateway" to other components and is intended to do a very minimal amount of work.

WP3 SmartHMA Architecture Design

Android components



SmartHMA – initial HMA related modules

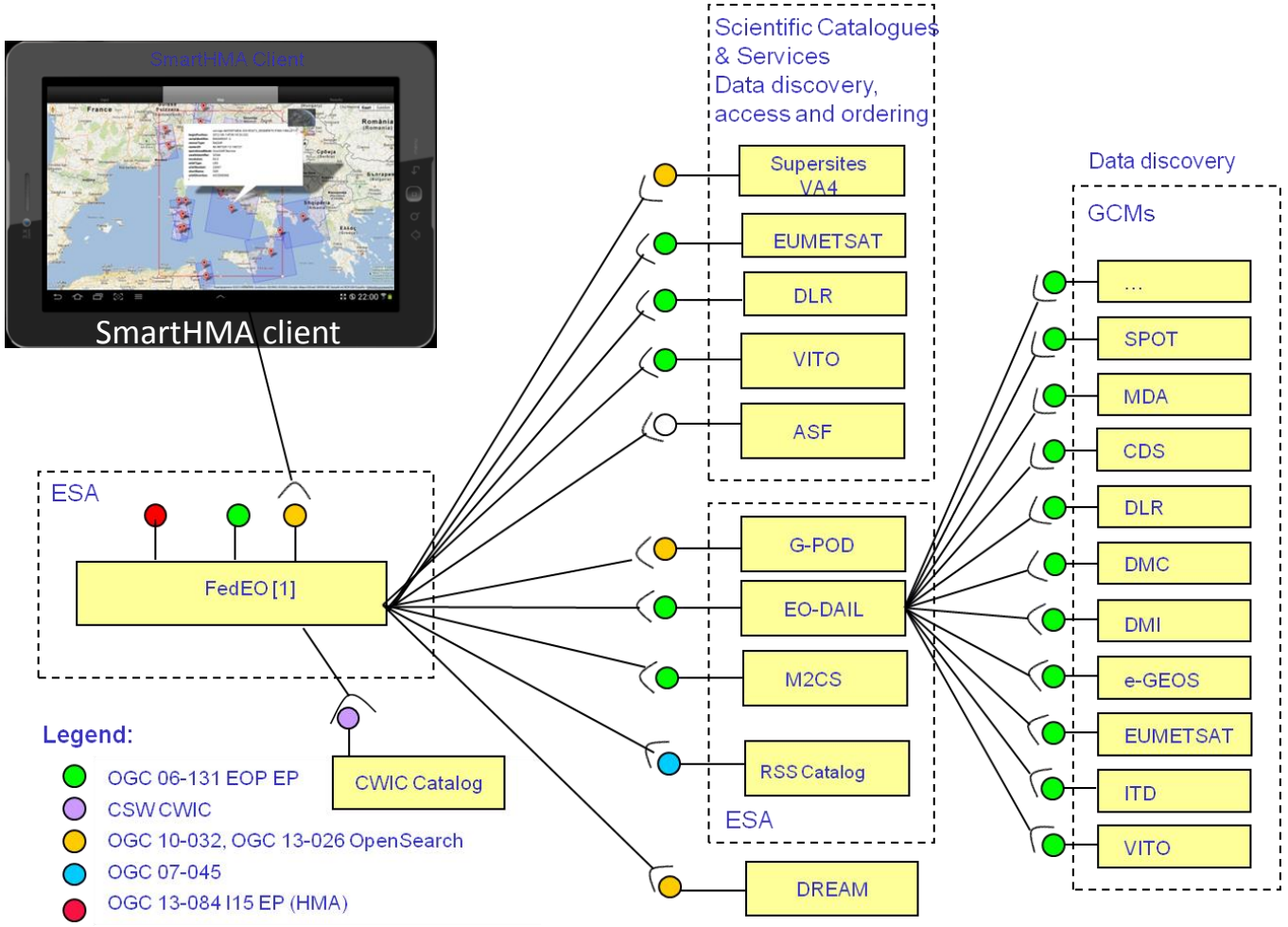
- The major functional requirements for the HMA which are mapped from HMA business uses cases
  - Authentication module
  - Authorisation modules
  - Discovery of datasets, dataset series, sensors and services methods
  - Data acquisition requests and feasibility analysis responses
  - Product ordering methods
  - Geospatial processing (if it will be implemented)*
  - Access to and on presentation of datasets on mobile device

SmartHMA – initial Android related modules

- The preliminary and major Android components implemented in SmartHMA application
  - MapView with presentation of search results with map background
  - Advanced ListView with datasets, dataset series search
  - Activities for authentication, authorisation
  - Set of PreferenceActivities for setting up parameters of searches or orders
  - Services for data requests and responses parsing
  - Services for products pre-ordering (or ordering and storing)
  - GCM - Google Cloud Messaging for Android for redirecting orders to custom server
  - Google Play Services (GoogleMap extensions)
  - Methods for access to and on presentation of datasets on mobile device
  - All necessary services, widgets, methods and components

WP3 SmartHMA Architecture Design

HMA related external interfaces



HMA related external interfaces

- Used interfaces and data connections:
  - OpenSearch interfaces for discovery of products (outcome of HMA-S project)
  - OpenSearch interface for Feasibility Analysis (outcome of HMA-S project).
  - Updated OGC CIM EP protocol (outcome of HMA-S project) – used for service and collection catalogues
  - Protocols defined as an outcome of running ESA DAIL/SSE project.
  - EO SPS (Sensor Planning Service) (outcome of DREAM and HMA-SE projects).
  - OGC WPS 2.0 (outcome of HMA-S project)
  - Ontology Access Service accessing a Sesame repository with SKOS concepts using VoID or SPARQL

Possible external interfaces

- Additional data sources (TBD)
  - Integration with EO-SSO
  - ESE in case to use WPS

Thank you !