SAP Composite Application Framework
Composite applications are user centric applications supporting highly collaborative and dynamic business processes which span numerous functional areas across and beyond organizations.

Examples
- Product Innovation in CPG
- Cost and Quotation Management in High Tech
- New Hiring and Provisioning

From an end-user perspective, Composite Applications ...
- Provide a rich user experience and including new user groups
- Leverage existing multi-source content
- Make functional and system boundaries invisible
- Provide process context and overall process visibility
- Enable enterprise-wide collaboration
- Can be installed and adapted in a very short time
Composite applications make use of data and functions provided as services by platforms and applications, combining these into user-centric processes and views, supported by its own business logic and specific user interfaces.

From a technical perspective, Composite Applications are …

- Usage- and process-centric: manage business processes which use different underlying, usually more data-centric applications and components
- Based on services: built and deployed on top of service operations of underlying components, combining these with new application logic and user interfaces
- Loosely coupled to backend systems: have their own lifecycle
- Abstracting from backend systems: run in heterogeneous system landscapes
- Dependent on service enabling of underlying applications or components
We start by thinking about a new user-centric process that reuses functionality from existing systems.
The systems have to be “service enabled” to provide their functionality in an unified way.
The “Exchange Infrastructure” acts as the messaging middleware for service communication, connectivity, transformation and portability.
The unified business object model provides the flexibility to make transparent use of business objects with local or remote persistency.
The unified service model provides service abstraction and shields higher layers from service implementation details making them replaceable.
New user interfaces can be created on top of the services provided.
Actions decouple process steps from services and user interfaces to allow business experts to model processes at a non-technical level.
Anatomy of a Composite Application

Role 1  Role 2

Step 1  Step 2  Step 3  Step 4

Workcenter
Composite Process
Actions
User interfaces
Business Objects, Services
Exchange Infrastructure (optional)

Remote Services
Business Objects
Local Services

Remote Services

UI

BO model
DB

Services
CRM

Services
BW

Services
ERP

Service Enablement Systems

User interfaces

BACKEND
SAP Composite Application Framework (SAP CAF)

SAP CAF is a methodology and toolset for building and managing composite applications, leveraging SAP NetWeaver capabilities.

SAP CAF combines SAP NetWeaver components and tools to drive throughout the whole application stack:

- **Process**: Creation and execution of cross component workflows with Guided Procedures
- **UI**: Leverage WebDynpro patterns and freestyle components, as well as Interactive Forms
- **Service**: Definition and implementation of business objects and services, including services from SAP NetWeaver components

**Value Drivers**

- **Service Composition & Orchestration**: Leverage existing data and information.
- **User Experience**: Integrate SAP NetWeaver capabilities into a collaborative process environment.
- **Agility**: Modify and enhance through non-invasive service extensions or process adaptations.
- **Efficiency**: Follow a model driven and pattern based architecture paradigm.
SAP CAF – Service Layer (CAF-Core)

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- Import external services such as RFCs or Web Services at design or configuration time
- Generation of EJB proxies for external services
- Mapping of external services to entity and application services
- Composition of appl. services using entity & external services
- Integration with SAP NW Knowledge Management & Collab. for content management, search capabilities, discussion serv.
- Extraction of data from entity & application services to SAP BI
- Notification service triggered by changes of entity instances
- Excel import & export, document generation
- Extension of entity services with custom fields at config. time
- Non-invasive extension of application services (planned)
- Re-configuration of external service mapping
- Connection with custom extensions through WebService interfaces and JMS based events
- Modeling of entity-, application-, and external services
- Generation of persistency (database tables and JDO metadata)
- Fully generated implementation for entity services, incl. life cycle methods (CRUD), authorization and eventing services
- Partially generated implementation of application services, incl. logging, exception handling, monitoring, permission handling
## SAP CAF – Service Layer (CAF-Core)

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SAP CAF – User Interface Layer (CAF-Core)

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- Standard WebDynpro patterns and controls for common user interface elements
- Freestyle WebDynpro components for dedicated tasks
- Re-configuration of UI patterns to adapt to changes in underlying services
- Re-combination of UI patterns and / or freestyle WebDynpro components
- Automatic generation of WebDynpro models for application services
- Provisioning of WebDynpro patterns
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- Modeling & managing user centric processes across multiple backend systems

- Invocation of various types of applications and services, e.g. WebDynpro, RFCs, R/3 transact., SAP BI queries, HTML, IAF

- Embedding application services as background steps

- Mapping of parameters between process steps

- Provision of a complete process visibility, while guiding users through process steps

- Role based assignment and processing of process steps

- Interactive Forms for on- and off-line execution

- Predefined or custom specific views for process execution, monitoring, administration

- Ad-hoc initiation of optional steps during process execution

- Code-free modification using re-usable process components

- Interface for an individual development of application components exposing context and result states to GP

- Definition of new callable object types by customers or partners

- Gallery with custom specific, re-usable process components for phases and steps

- Process specific parameter & role consolidation at config. time

- Predefined implementations for data input and display, approval, decision, and Email for example

- Integration of WebDynpro UI patterns incl. parameter mapping
Composite Applications

SAP Composite Application Framework