Bundesministerium für Bildung und Forschung
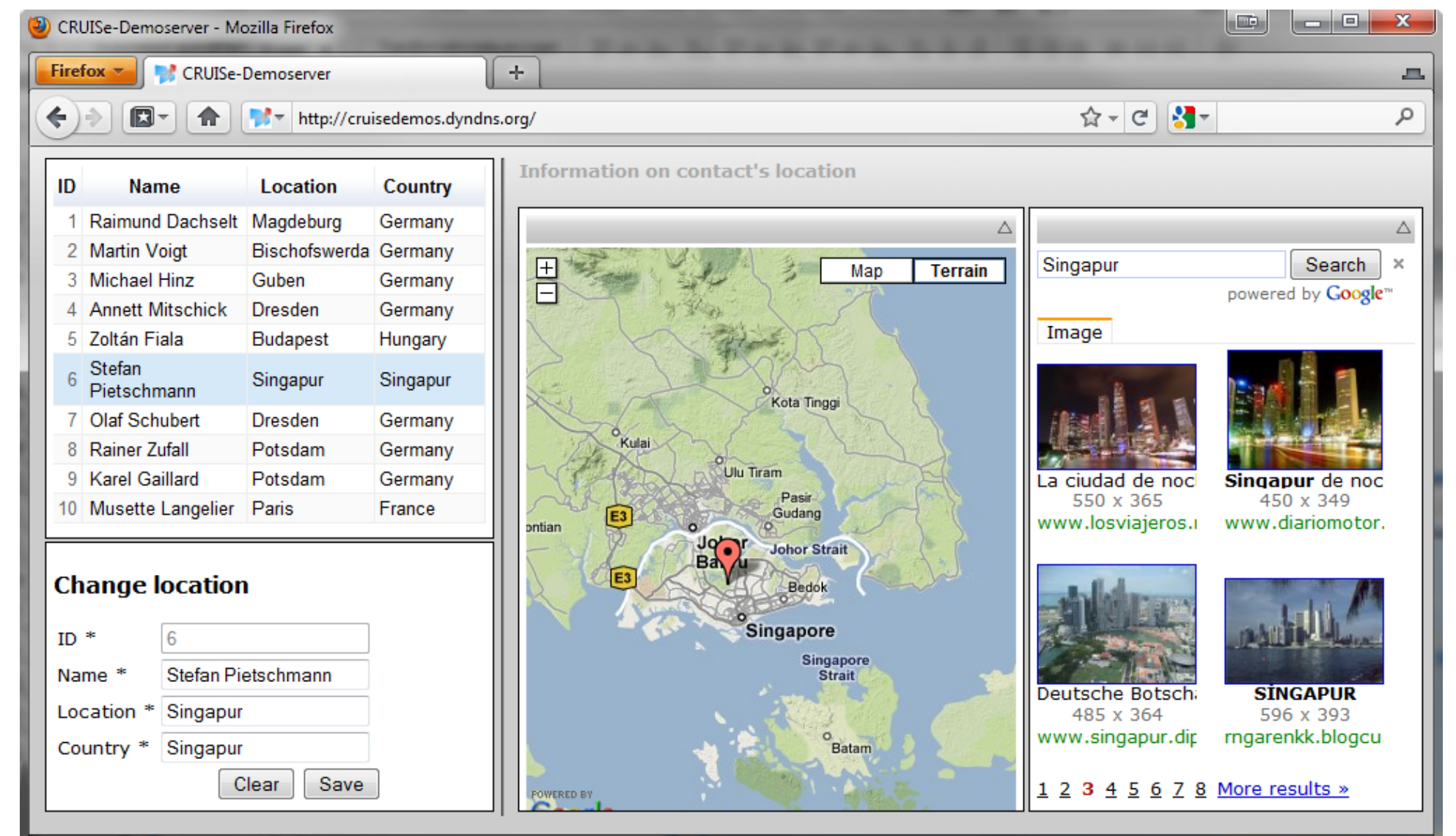FKZ 01IS08034-C

CRUISe: Composition of Rich User Interface Services
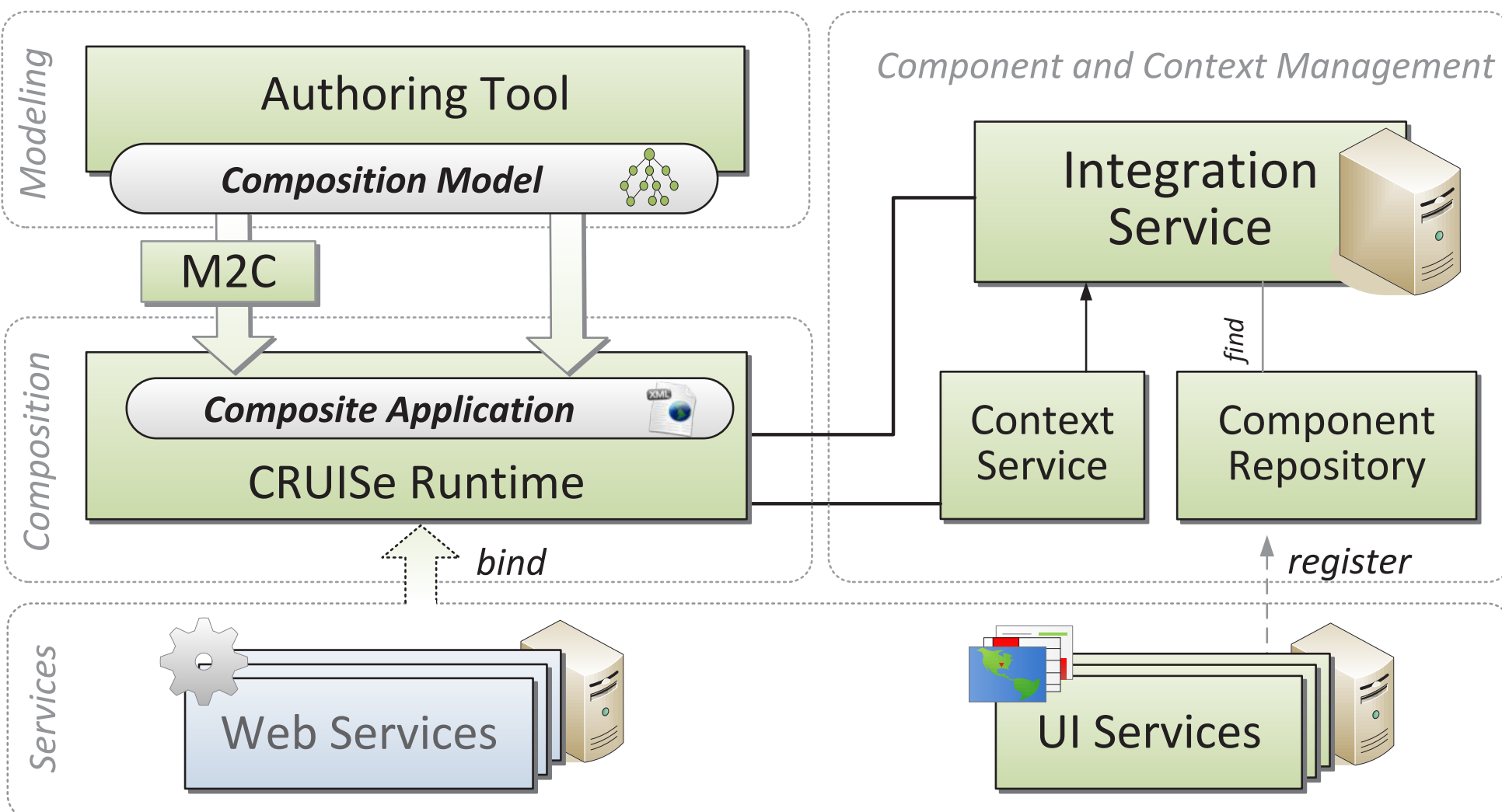
MOTIVATION

- Web as application platform (SaaS, Mashups)

- Backend: Reusable data and business logic through loosely coupled, distributed web services

- Frontend: Costly development and maintenance
  - » Heterogeneous technologies and platforms
  - » Heterogeneous users, devices, and situations

VISION

- Services at the presentation layer

- **Universal Composition** of mashups from distributed services at difference application layers

- Context-aware selection and integration of backend and frontend services at runtime

CRUISe-based mashup application

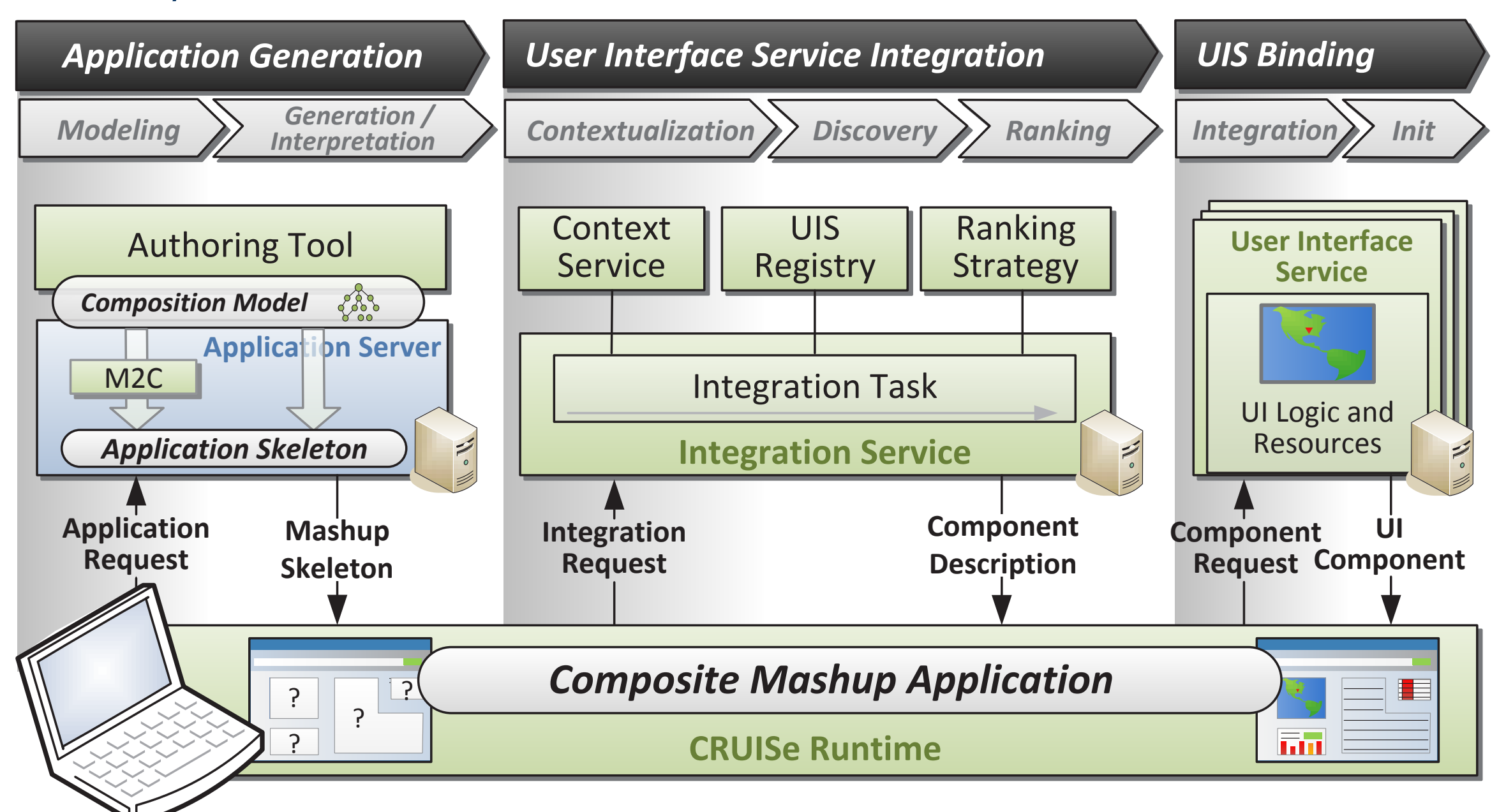**Conceptional Overview of the CRUISe infrastructure**

COMPONENTS & UIS

- Universal component model for reusable parts of composite mashup applications (UI, logic, data)

- Uniform component description (including semantics) with the *Mashup Component Description Language* (MCDL)

- Service-oriented development of user interface by composing **UI Services (UIS)**

- Storage and Management of components in a *Component Repository*

MODELING

- **Model-Driven Development** based on the *CRUISe Composition Model*
  - » Concepts and component configurations
  - » Layout and navigation
  - » Data and control flow
  - » Adaptive behavior

- Composition by non-programmers using (visual) authoring tools

CONTEXT-AWARE COMPOSITION

- Model transformation into executable application at design time, or interpretation at runtime

- Execution of an adaptive composite application by platform-specific *Runtimes*, e.g., for
  - » Thin Server Architecture (client-side)
  - » Eclipse Rich Ajax Platform (client/server)
  - » BPEL4People / Human Tasks (process-integrated)

- Constant monitoring of user, usage, device, and application context and management by a dedicated, ontology-based *Context Service*

- Dynamic binding of web and UI services

- Context-aware selection, i.e., *ranking* of services to be integrated by the *Integration Service*

- Additional dynamic adaptations at runtime
  - » Adaptation *aspects* crosscutting the application
  - » Adaptive layout, component reconfiguration and exchange, adaptive data flow, adaptive navigation

Process of application modeling and client-side integration of the mashup UI

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