TECHNISCHE UNIVERSITÄT DRESDEN

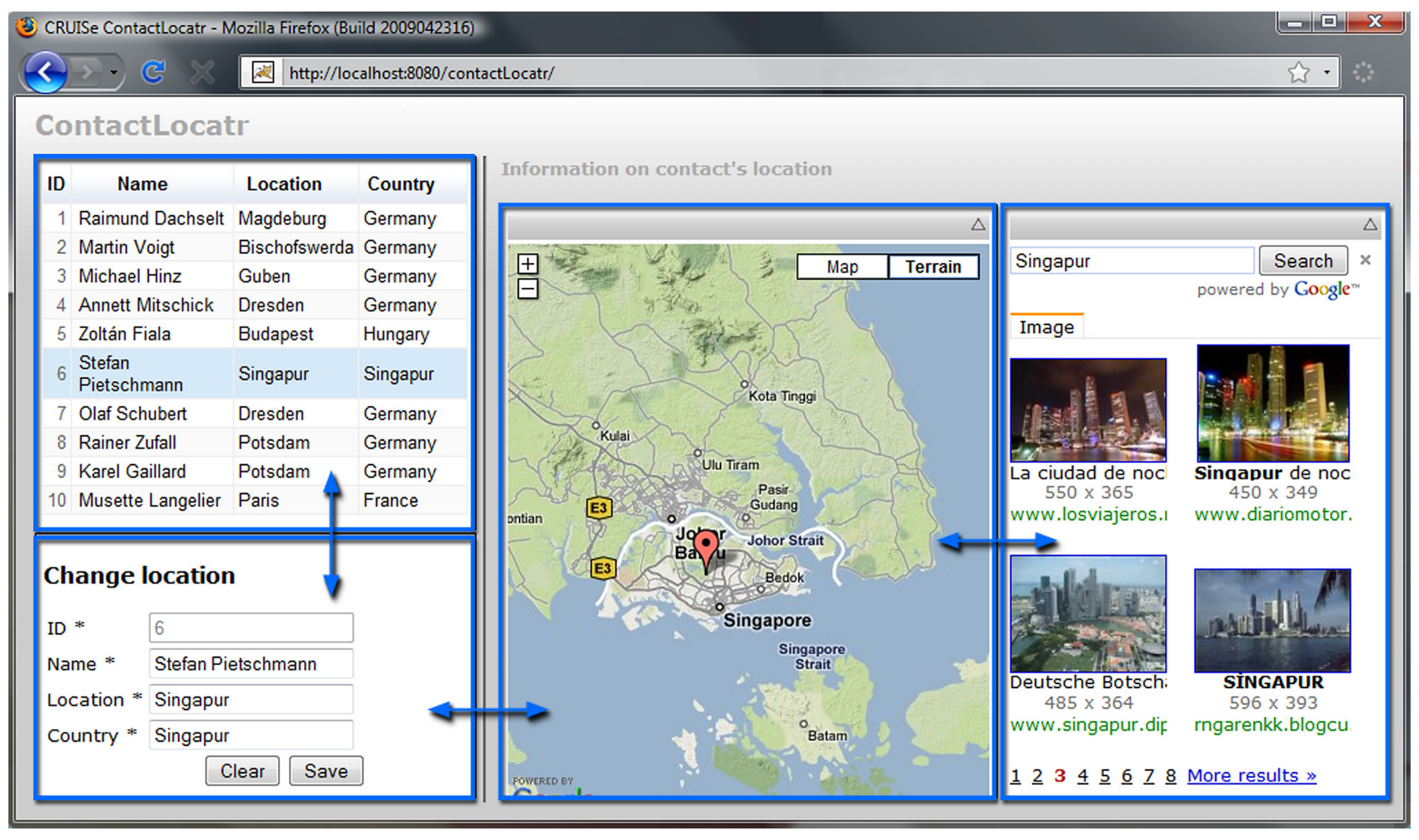
Faculty of Computer Science Institute of Software and Multimedia Technology, Chair of Multimedia Technology

Bundesministerium für Bildung und Forschung
FKZ 01IS08034-C

CRUISe: Composition of Rich User Interface Services

MOTIVATION

- Web evolution to an application platform: *Programmable Web*
- New paradigms in the back end
  - » (Web) services allow for technology-independence, reusability, and distribution of application logic and persistence
- New problems in the front end
  - » Costly development and maintenance of rich web UIs
  - » Heterogeneous technologies and frameworks hinder interoperability, reusability and sustainability
  - » Heterogeneous user, usage, and device contexts need to be taken into account


CRUISe ContactLocatr - Mozilla Firefox (Build 2009042316)
http://localhost:8080/contactLocatr/

ContactLocatr

ID	Name	Location	Country
1	Raimund Dachselt	Magdeburg	Germany
2	Martin Voigt	Bischofswerda	Germany
3	Michael Hinz	Guben	Germany
4	Annett Mitschick	Dresden	Germany
5	Zoltán Fiala	Budapest	Hungary
6	Stefan Pietschmann	Singapur	Singapur
7	Olaf Schubert	Dresden	Germany
8	Rainer Zufall	Potsdam	Germany
9	Karel Gaillard	Potsdam	Germany
10	Musette Langelier	Paris	France

Change location

ID *	6
Name *	Stefan Pietschmann
Location *	Singapur
Country *	Singapur

Clear Save

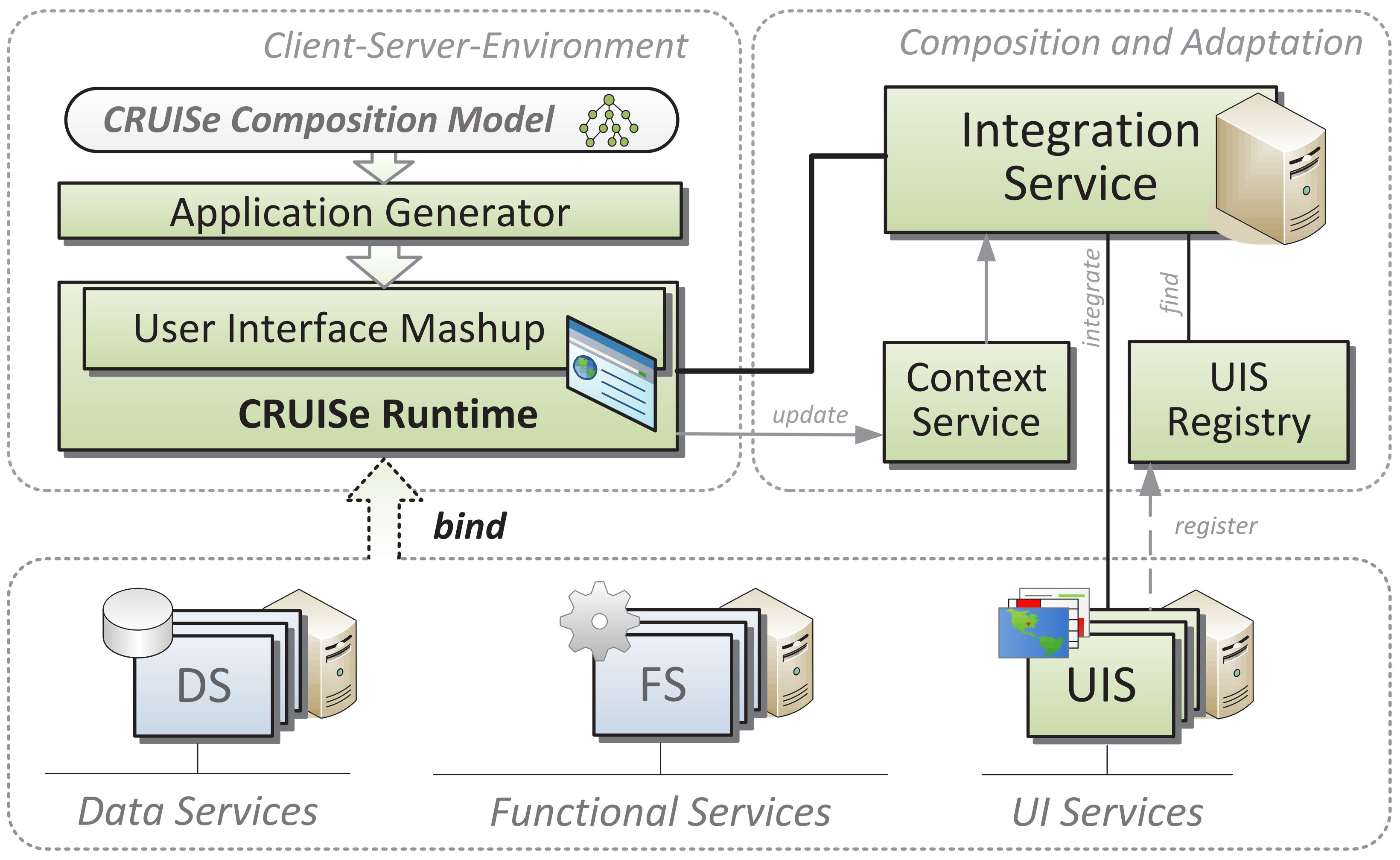
Information on contact's location

Map
Terrain
Kota Tinggi
Kulai
Ulu Tiram
Pasir Gudang
Johor Strait
Bedok
Singapore
Singapore Strait
Batam
Singapur
Search
powered by Google
Image
La ciudad de noc 550 x 365 www.losviajeros.
Singapur de noc 450 x 349 www.diariomotor.
Deutsche Botsch 485 x 364 www.singapur.dip
SINGAPUR 596 x 393 rngarenkk.blogcu
1 2 3 4 5 6 7 8 More results »

CRUISe-based mashup UI

VISION

- Application of the SOA paradigm to the web presentation layer
- Platform-independent modeling of mashup user interfaces
- Dynamic, context-aware UI composition from distributed, generic user interface components



Conceptual overview of the CRUISe system

UI SERVICES

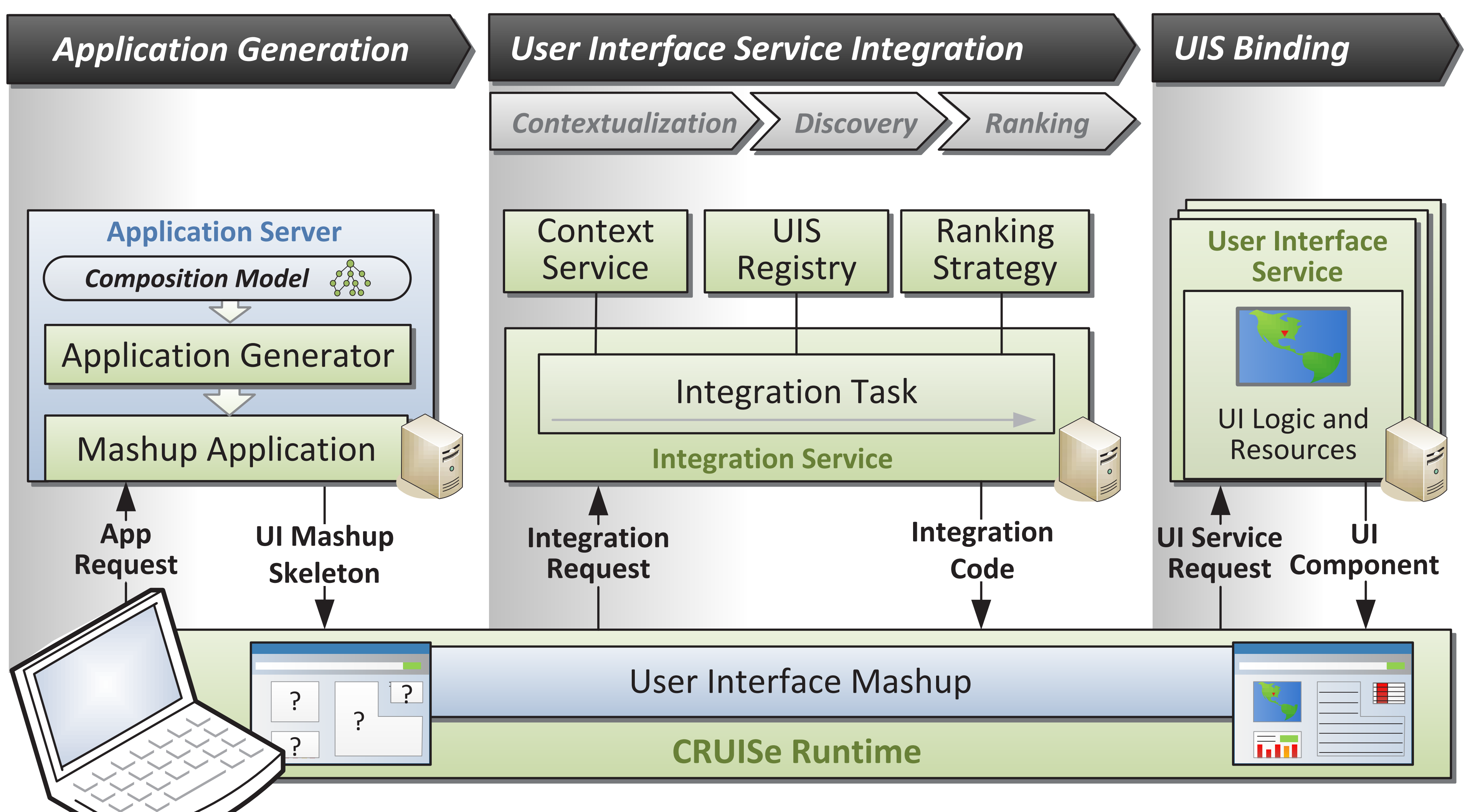
- *User Interface Services* (UIS) provide web UI components and their resources, like images, styles and required libraries
- *User Interface Components* (UIC) are client-side, reusable and configurable web UI parts with a generic JavaScript interface
- UIS and the corresponding UIC are classified and described by a UIS Description Language (UISDL)
- UISDL instances are managed by a UIS Registry

UI MODELING

- Visual modeling of the mashup UI results in the platform-independent *Composition Model*, defining
  - » Layout and configuration of UICs
  - » Data and control flow between UICs
  - » Binding of UICs to back end services
  - » Adaptive behavior of the overall UI
- Model transformation to a platform-specific *UI Mashup Skeleton* by the *Application Generator*
- Skeleton contains "UI hot spots" to be filled by UIS at run time, and is deployed on the server

CONTEXT-AWARE UI COMPOSITION

- Adaptive composition results from the dynamic, context-aware integration of UI components into the skeleton
- Platform-dependent *CRUISe Runtime* controls integration, initialization and event flow between UI components, e.g., for
  - » Thin Server Architecture (TSA)
  - » Eclipse Rich Ajax Platform (RAP)
  - » Human Tasks (BPEL4People, WS-HumanTask)
  - » Web Portals
- UI initialization triggers invocation of the *Integration Service* (either server- or client-side) which starts the *Integration Task:*
  - » Contextualization of the UI integration request with the help of an external *Context Management Service*
  - » Discovery of suitable UIS in a corresponding *UIS Registry*
  - » Selection of UIS based on a customizable *Ranking Strategy*
  - » Platform-specific wrapping of the generic UIC
- Client-side integration of the returned UIC by the Runtime
  - » Loading of required libraries and unique UIC namespacing
  - » Initialization of the UIC via its interface
  - » Transparent loading of additional resources from the UIS
- Runtime also controls dynamic adaptation to the context, incl. adaptive layout, reconfiguration and exchange of UICs



Generation, deployment and runtime composition of a CRUISe-based UI

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