Plasma Active & Contour
A new activity based mobile user interface with Plasma and Nepomuk

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basysKom
Big picture
Project Plasma Active

A new activity based mobile user interface with Plasma and Nepomuk
Marco Martin, Fania Jöck
Mon, 10:20 - 10:50
Audimax

Plasma Active - Conquering the Device Spectrum
Sebastian Kügler
Sun, 09:40 - 10:10
Kinosaal

Activities - the helpful Big Brother
Ivan Ćukić
Mon, 14:00 - 14:30
Audimax

Compositing after X - KWin on the Road to Wayland
Martin Gräßlin
Sat, 14:00 - 14:30
Rm2002
Who are we?

Plasma Active

- Plasma Mobile
- Contour
- Share Like Connect
- Active Apps
What is this all about?

desktop, touch, mobile, context-sensitive, tables, workspaces, tablets, user interface, KDE, UX
Why should we need that?

User adapts to the system

The system adapts to the user
What is new in Contour?

- **Informations + Actions = Activity**
  - information on the system linked with actions
  - user chooses those activities instead of applications
  - system learns and analyses usage patterns (actions and events)

- **Smart recommendations**
  - system provides dynamic data based on patterns and on context
  - analysis of timeline (past, present and future)
  - prioritization, big change in user behavior
Concept
Concept of Contour

Pattern

Context

Activity

Recommendations
Concept

Context
= geo location, time, active files and applications, current activity, recent action history
Concept

Context
= geo location, time, active files and applications, current activity, recent action history

Patterns
= regular actions of the user in similar contexts
Concept

Pattern = regular actions of the user in similar contexts

Context = geo location, time, active files and applications, current activity, recent action history

Activities = individualized work spaces that contain resources like files, contacts, applications
**Concept**

**Patterns**
- regular actions of the user in similar contexts

**Context**
- geo location, time, active files and applications, current activity, recent action history

**Activities**
- individualized work spaces that contain resources like files, contacts, applications

**Recommendations**
- propositions for actions that are dynamically changing to context, based on the detected patterns
Context

= geo location, time, current activity, active files and applications, recent action history
Patterns

= regular actions of the user in similar contexts
Activity

Context

Pattern

Recommendations

= individualized work spaces that contain resources like files, contacts, applications
Recommendations
Somebody already had that idea...
Smart adaptations – Activity Switcher

...adapts to current context

At home

At university
Smart adaptions – Context Menu

...adapts to object type and last events

For documents

For contacts
Smart adaptations – recommendation overlay

... adapts to current activity and recent action history

Grandma just called

Writing the invitation
Interface Design
Different zones

ACTIVITY SCREEN

- Carl is online. Start a chat with this person.
- Add contact "Herta" to this activity
- Open current location in foursquare browser
- Listen to orange popmusic
Different zones

Recommendation Overlay

- Carl is online. Start a chat with this person.
- Add contact "Herta" to this activity
- Open current location in foursquare browser
- Listen to orange popmusic
Different zones
Different zones

Top Bar
Different zones

Activity Switcher

ACTIVITY SCREEN

- Carl is online. Start a chat with this person.
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Live Demo
Technical background
Plasma perspective: data

- Metadata dataengine
- Activity manager daemon and the recommendations dataengine
- Those are sources for:
  - Nepomuk resources connected to the current activity
  - Recommendations (resources with high scoring/actions associated to them)
Visualization

- PlasmaMobile shell
- QML packages used for independent, big components (almost blackbox, opposed to imports)
  - Homescreen: first thing loaded from the shell
  - Activity switcher
  - Recommendations overlay

- Containments
  - Activity screen
  - Panel
  - Window switcher
  - Launcher
Plasma mobile booting

- QML homescreen loaded
- The appletsrc config file gets loaded
- All containment restored:
- Systray, window switcher and launcher containments go in a partially offscreen panel
- The main screen “Planar” containment gets restored
  - In the case of Contour they are instances of the Current activity screen
  - Transition between activity containments will be managed by a QML animation
Activity screen Containment

- QML-only Applet/Containment
- Uses the metadata dataengine

PlasmaCore.DataSource {
    id: metadataSource
    engine: "org.kde.active.metadata"
    interval: 0
    connectedSources: ["CurrentActivityResources:"+plasmoid.activityId]}


Activity Resources

- The source "CurrentActivityResources:activity id" executes:
  Nepomuk::Resource acRes("activities://" + activityId);
  Nepomuk::Query::ComparisonTerm
  term(Soprano::Vocabulary::NAO::isRelated(),
   Nepomuk::Query::ResourceTerm(acRes));
  term.setInverted(true);
  Nepomuk::Query::Query query =
  Nepomuk::Query::Query(term);

- The property isRelated gets assigned by the user with a search screen implemented in the containment itself or with the SLC mechanism
Containment layout

- Resources split by category: proxy model
- Space divided in cells, internal data structure to keep track of busy/taken ones
- User moves/resizes a box: JS function invoked that performs a simple lookup of the nearest free cell (back and forward)
- The box gets aligned to the nearest free space to the dropped position, resized if necessary
- A *Behavior* on geometry properties ensures it happens with a smooth animation
- Plasmoids are positioned in the same way
Connection: SLC

- Each resource icon has a context menu: same entries as the top panel icons
- Active applications will publish with a simple api what is the current open “thing”
  - File path
  - Nepomuk URI
  - Web URL
  - Geo location
- Plugins will provide actions for those urls
  - “Share”: upload on flickr...
  - “Like”: rate, like on facebook...
  - “Connect”: connect to the current activity, with another resource...
Recommendations

- The activity manager is used to keep track of what gets opened and modified...
- Base for the Contour Recommendations system
- All resources scored and “most likely” actions assigned to them
- The Contour daemon publishes them on DBUS
- The Recommendations UI (another generic package loaded from the home screen QML) displays them as a list in a panel on top of the rest
Participate

- Website: [http://community.kde.org/Plasma/Active/Contour](http://community.kde.org/Plasma/Active/Contour)
- Mailinglist: active@kde.org
- IRC: #active
- Fanias Blog: [http://contourproject.wordpress.com](http://contourproject.wordpress.com)

The Contour project is contributed by basyskom GmbH and released in KDE as open source. We want to share our ideas and development with the community to contribute it to the public. Read more at [http://contour.basyskom.com](http://contour.basyskom.com) or go to our website at [www.basyskom.com](http://www.basyskom.com)