XDG-Shell Support for IVI-Shell

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Agenda

- Introduction
- What’s new?
- Current and New Setup
- How is it done?
- ivi-id-agent
- Benefits
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Working for ADIT since 2016 as Graphics Engineer
  - Weston
  - Wayland-IVI-Extension
  - Performance Analysis

ADIT is a Joint Venture between BOSCH and DENSO for Platform Development of Their IVI-Systems

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Introduction to IVI-Shell

- **Shell for weston (wayland compositor)**

- **Focus on ivi-systems**
  - Numerical id to handle surfaces by a HMI
  - Modular window manager
What’s new?

- **Xdg-shell support added**
  - wl-shell protocol added
  - xdg protocol added
  - ivi-application protocol still supported

- **Custom id agent plugin for weston (wayland compositor)**
  - generate ids for applications
  - configuration file
Id is generated in app
Notify compositor about id: custom protocol required

Modular Window Manager: easy to exchange and develop

ivi-application protocol

ili-interface with ivi-wm protocol
Id is **NOT** generated in app
Common protocol can be used: xdg protocol

Modular Window Manager: easy to exchange and develop

Id is generated in compositor by custom id-agent

HMI / Window Manager

ilm-interface with ivi-wm protocol

xdg protocol

Weston
Wayland Compositor

Id Agent
Weston (Wayland Compositor)

ivi-shell

libweston-desktop

ivi-layout

set surface-id

interface

desktop surface configured

signal

ivi-surface created / configured

signals

id-agent

ivi-controller
- Reference implementation: wayland-ivi-extension repository

- Parameters for application configuration
  - surface-id (numeric, mandatory)
  - app-id (part of xdg protocol, optional)
  - app-title (part of xdg protocol, optional)

- Optional: Default behavior for unconfigured applications
  - default-surface-id (numeric, mandatory)
  - default-surface-id-max (numeric, mandatory)

- Feasibility check of configuration at initialization

- [https://github.com/mtey/wayland-ivi-extension/commit/ce4074f946c54d1d980b4a5e5e762b991af79739](https://github.com/mtey/wayland-ivi-extension/commit/ce4074f946c54d1d980b4a5e5e762b991af79739)
Resent weston patches to the community (rebased to weston v4.0)

Patches available on my github: @mtey
- Weston: https://github.com/mtey/weston/tree/xdg_support_ivi_id_agent
- Wayland-ivi-extension: https://github.com/mtey/wayland-ivi-extension/tree/xdg_support_ivi_id_agent
Thanks for your attention!

Are there any questions?
Benefits

- ivi-application protocol is still supported within ivi-shell
- xdg-shell support is added to ivi-shell which enables to use desktop applications with automotive window management
- Application development does not require extra knowledge about ivi-systems → easier and faster application development
- Many desktop applications can be run natively
- Open source frameworks (for Wayland) can be supported out of the box