Porting Tizen IVI to Wayland

Manuel Bachmann

<manuel.bachmann@open.eurogiciel.org>
Eurogiciel

Open-source development and integration:

- Maintainers for tizen.org (Base, Test, Web Framework, … domains)
- Embedded systems for real-time multimedia:
  - Widi/Miracast stack,
  - Wayland/Weston,
  - Webkit2 browser with HW acceleration.
- Applications: HTML5/CSS3, jquery, jqmobi, Cordova
- Location: Brittany - France
About me

Manuel Bachmann
<manuel.bachmann@open.eurogiciel.org>

- Previous maintainer of the GTK+3 for Win32 packages ;
- Author of a GLX wrapper for EGL : EGLX \(^{(1)}\) ;
- Upstream contributor to Weston, EFL, Ozone-Wayland... ;
- Maintains Weston and UI domain packages under Tizen.
Summary

- IVI: In-Vehicle Infotainment
- Making Tizen IVI Wayland-only
- Crosswalk web framework, Tizen APIs and XDG-Shell
- IVI-Shell for native extended IVI capabilities
- Frameworks and toolkits integration
IVI: In-Vehicle Infotainment

- dedicated to vehicles;
- following the GENIVI \(^{(1)}\) alliance specification;
- two main flavors:
  - Modello Homescreen with the Crosswalk web framework;
  - ICO Homescreen with IVI-Shell.
<DEMO TIME>

- 1) Tizen IVI with Modello Homescreen
- 2) Tizen IVI with ICO Homescreen
Making Tizen IVI Wayland-only

- Tizen Common supports several architectures (X86, AMD64, ARM…) and, for each one, a X11 and a Wayland profile;
- Macros (%with_x, %with_wayland, ...) ensure building all packages for the right profile;
- Tizen IVI is a x86 (Atom) Wayland profile with specifics;
- Cleaned out of its X11 crufts by April 2014, thanks to release manager Mikko Ylinen.
Making Tizen IVI Wayland-only

from Git repositories to X11/Wayland packages
Crosswalk, Tizen API and XDG-Shell

- Based on Chromium, with specifics in the web engine and additional Tizen extensions;

- Ozone-Wayland backend uses Wayland XDG-Shell for some Tizen API functionalities:
  - `tizen.application.hide()` is mapped to `xdg_surface_set_minimized()`;
  - `tizen.application.launch()`, on an already started application, will resume it and bring it to foreground with `xdg_surface_present()` (Tizen patch);
  - Hope to see `xdg_surface_present()` in the next Weston upstream release (2).
<DEMO TIME>

- 1) demo app with hide()/launch()
- 2) Tizen IVI - Modello Homescreen and hide()/launch()
In review process upstream, developer is TANIBATA Nobuhiko, hope to see it in Weston 1.7.0;

Provides a Weston shell interface compliant with the GENIVI specification\(^{(1)}\);

We maintain an external Weston Git repository with patches applied for reviewers\(^{(3)}\), and build it as a separate plugin under Tizen;

Compatibility layer with XDG-Shell, so that standard applications can use it, has been proven possible and is currently being done\(^{(4)}\).
<DEMO TIME>

- 1) Tizen IVI - IVI-Shell and XDG-Shell compat demo
Frameworks and toolkits integration

- **EFL** : XDG-Shell and IVI-Shell pushed and integrated upstream\(^{(5)}\);
- **Qt** : XDG-Shell pushed and integrated upstream by Philippe Coval, IVI-Shell under review\(^{(6)}\);
- Crosswalk/Ozone-Wayland : XDG-Shell and IVI-Shell pushed and integrated upstream\(^{(7)}\).
Links

1. GENIVI alliance: http://www.genivi.org
3. weston-ivi-shell upstream adaptation GitHub repository: https://github.com/Tarnyko/weston-ivi-shell
4. ivi-shell xdg-shell compatibility layer feasability: https://www.mail-archive.com/ivi@lists.tizen.org/msg02702.html
5. EFL upstream wayland shells: http://git.enlightenment.org/core/efl.git/commit/?id=87f02170e659678d7a2f000e6850bd3a29962756
   - https://git.enlightenment.org/core/efl.git/commit/?id=50287ab731d4d87170238b365203e830edc038d5
● (6) : Qt upstream wayland shells:
   https://bugreports.qt-project.org/browse/QTBUG-38633
   https://bugreports.qt-project.org/browse/QTBUG-41172

● (7) : Ozone-Wayland upstream wayland shells:
   https://github.com/01org/ozone-wayland/commit/5f8a34c613ba826c7994c81d03f87df19f48881d
   https://github.com/01org/ozone-wayland/commit/a034a018b6ec317ec5559dcce6efec916ec40512
Q&A
That's all folks !