



Application Framework: Apertis Hands-on

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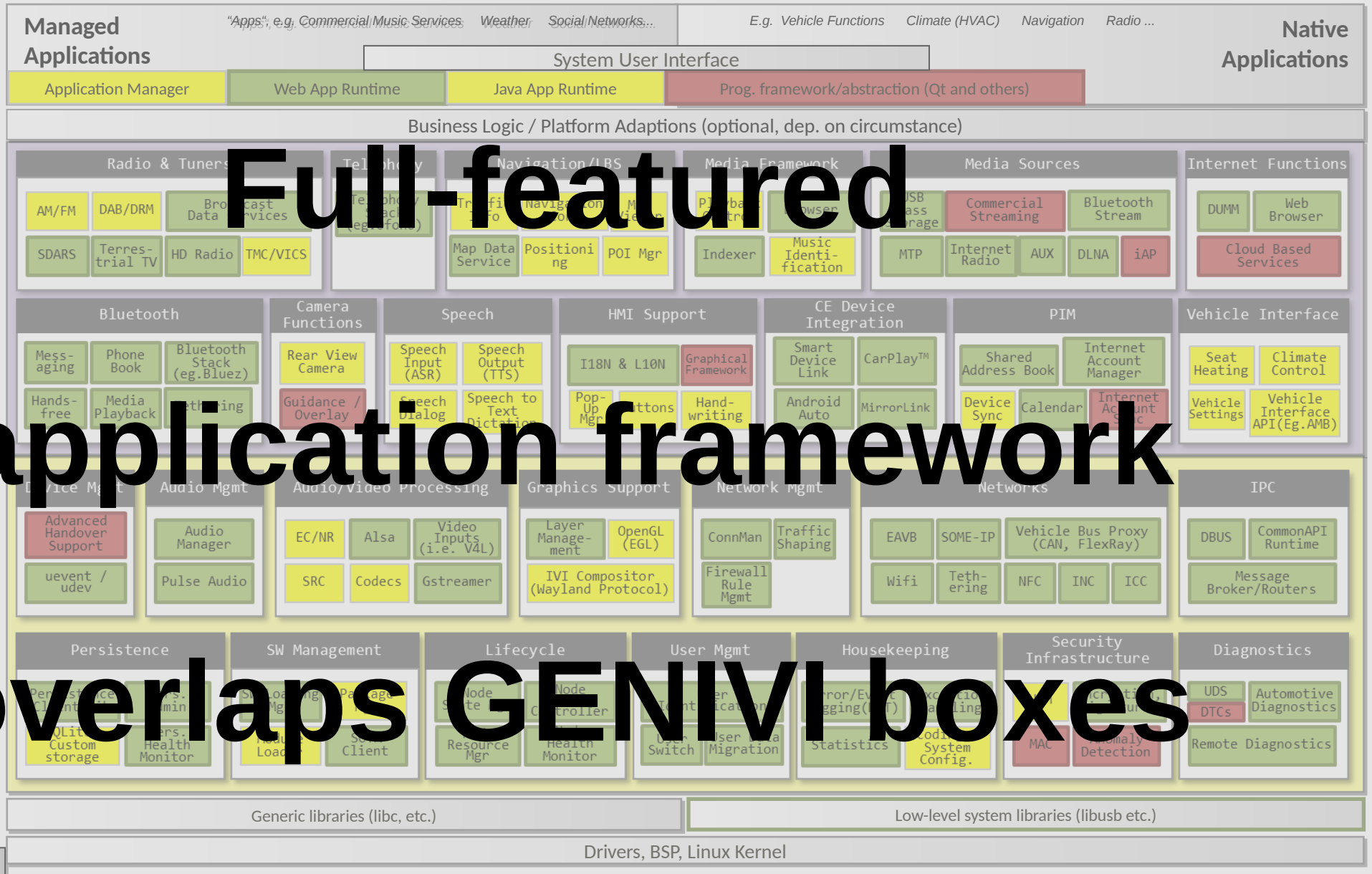
APERDIS

- Free and open source, GNU/Linux-based platform for infotainment in automotive vehicles
- End-to-end implementation of an application centric solution for IVI
- Aiming at providing secure yet flexible environment that satisfy automotive OEM requirements and application developers' needs

- GNU/Linux distribution derived from Debian/Ubuntu
- Product-specific images for ARM and Intel x86
- SDK virtual machine with full developer tools
- Developer portal and App Store for distribution

While staying as stable as possible:

- Release every 3 months
- Rebase every 6 months



Full-featured

application framework

overlaps GENIVI boxes

Legend

- Requirements or purpose description (likely Placeholder Component)
- Interfaces Defined (likely Abstract Component)
- Shared Implementation (likely Specific Component)
- Not specified

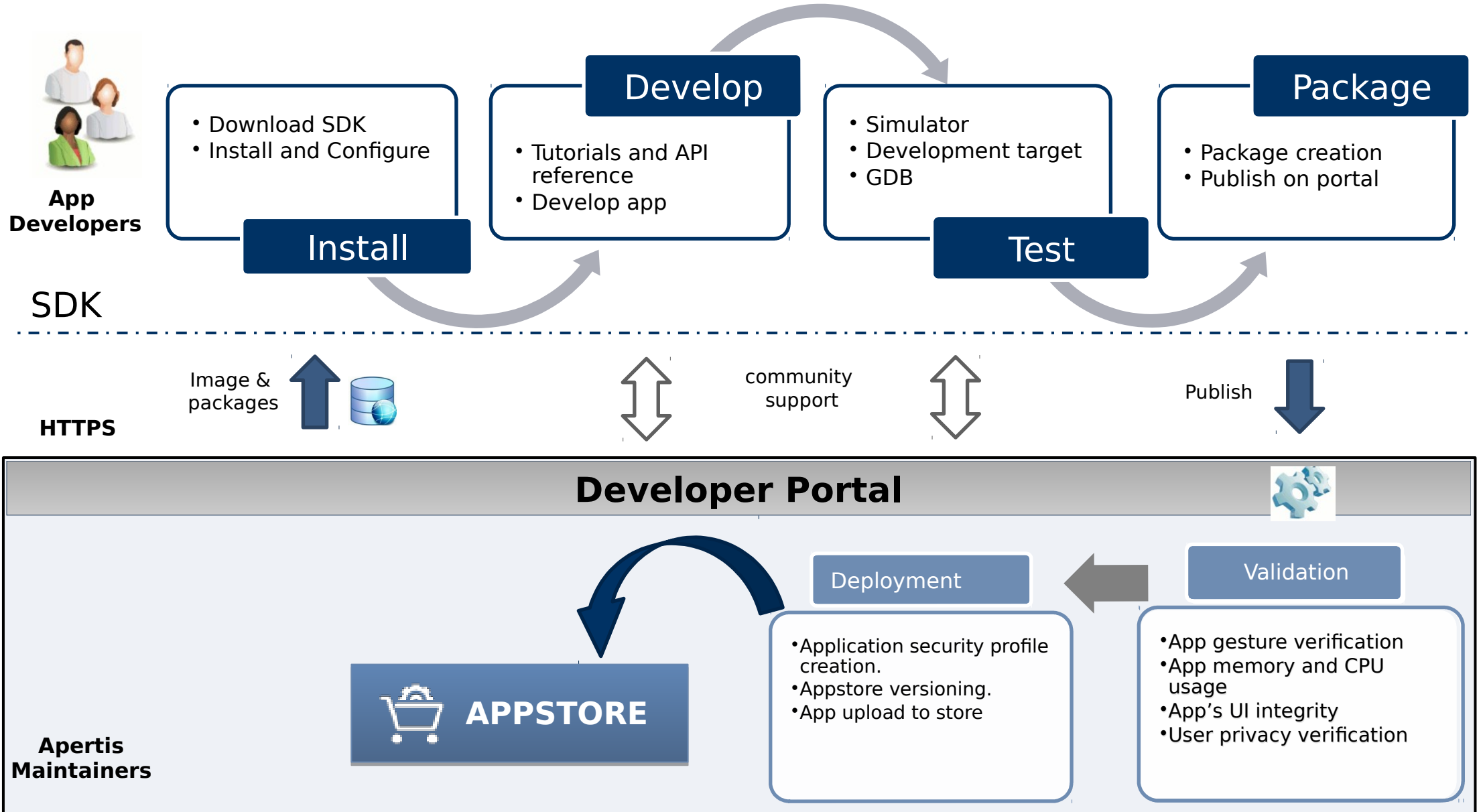
The colors are a close approximation – sometimes a box will be broken down into detailed components in a full architecture.



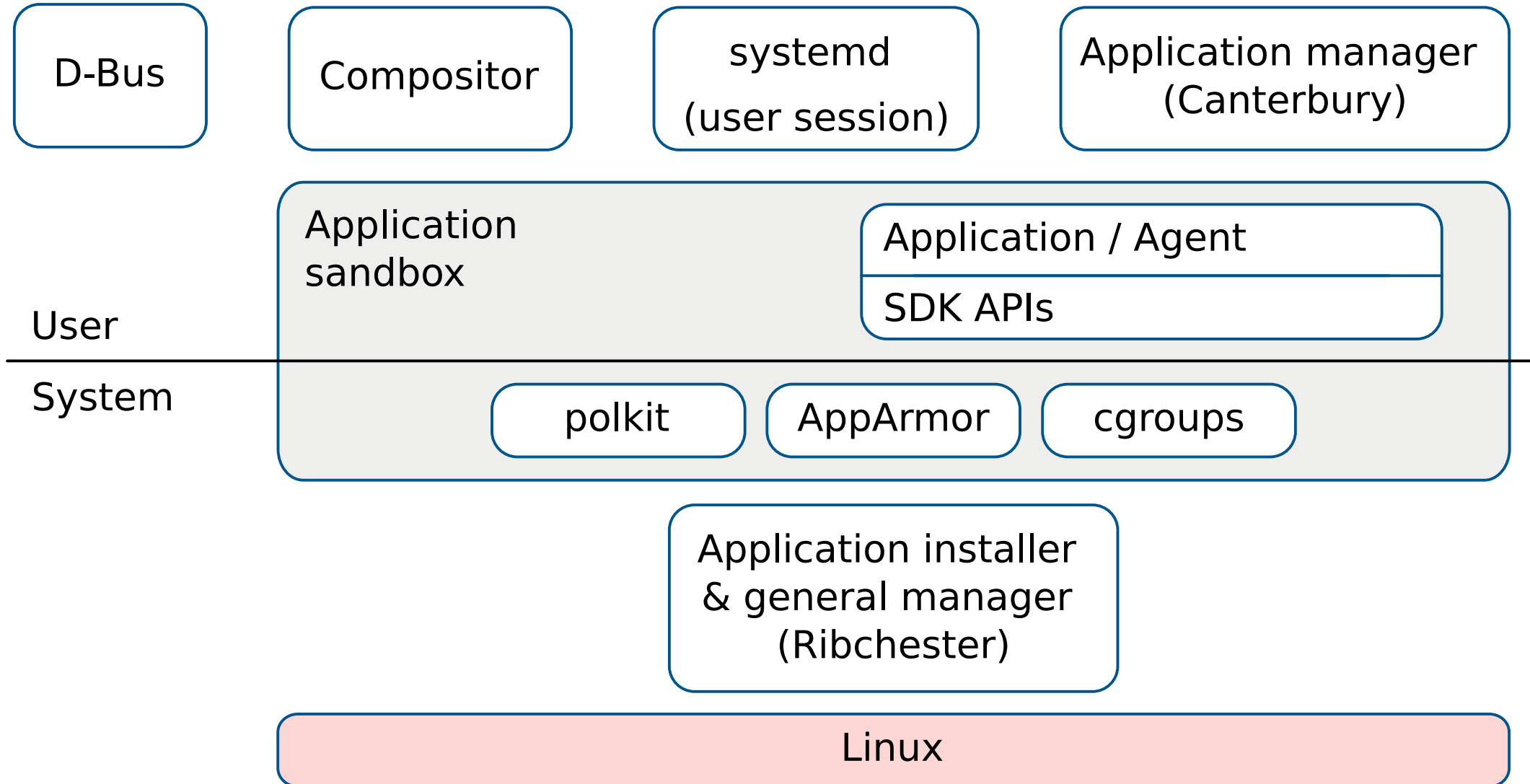
- Distinctions between applications
 - Built-in applications:
 - Core applications (required to run)
 - Pre-installed applications (selected by OEM, can not be uninstalled)
 - Applications coming from the application store
- Native and web applications
 - APIs currently primarily cater to proper C applications
- Services / Libraries
 - Provide functionalities to others

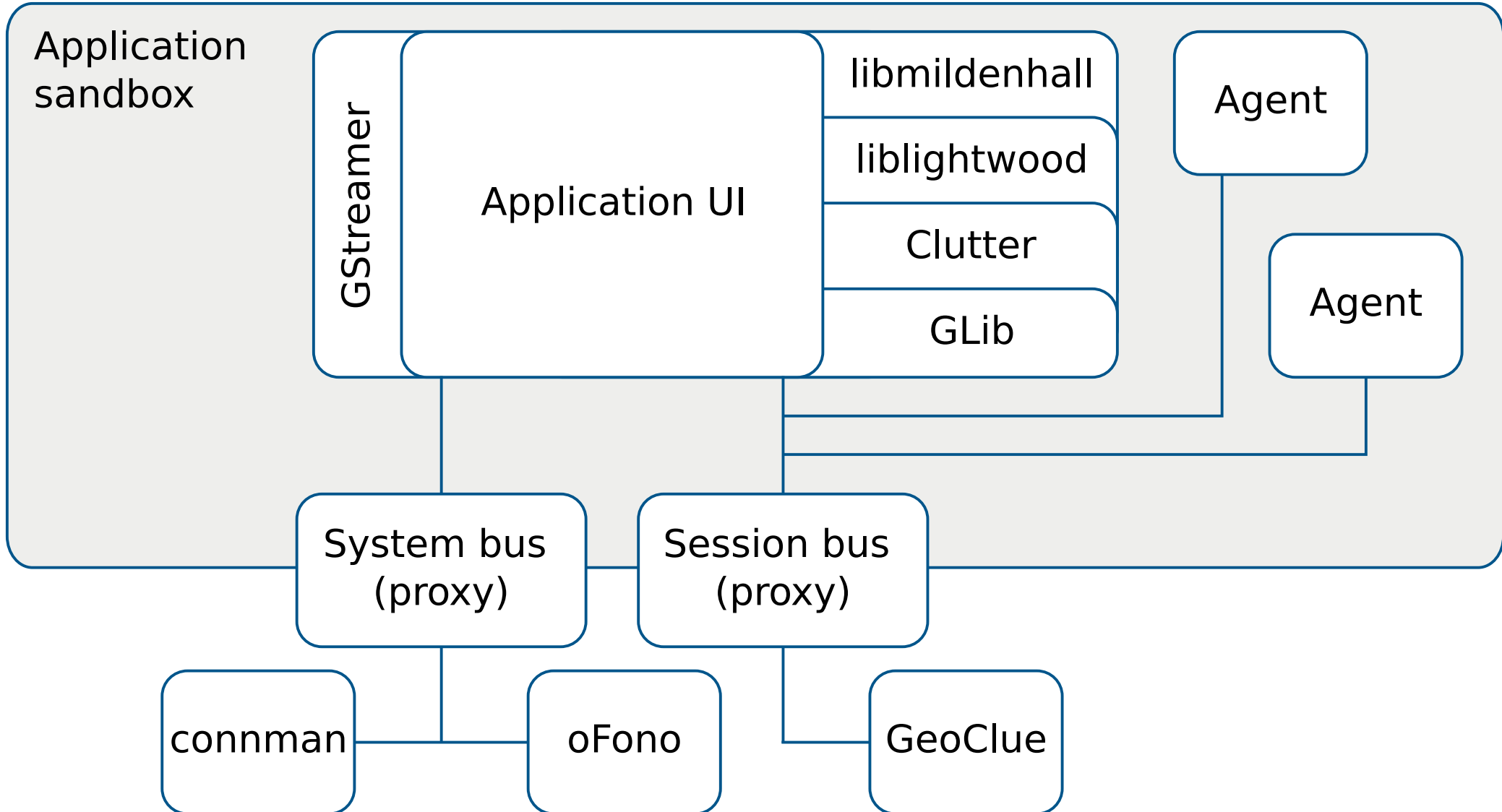


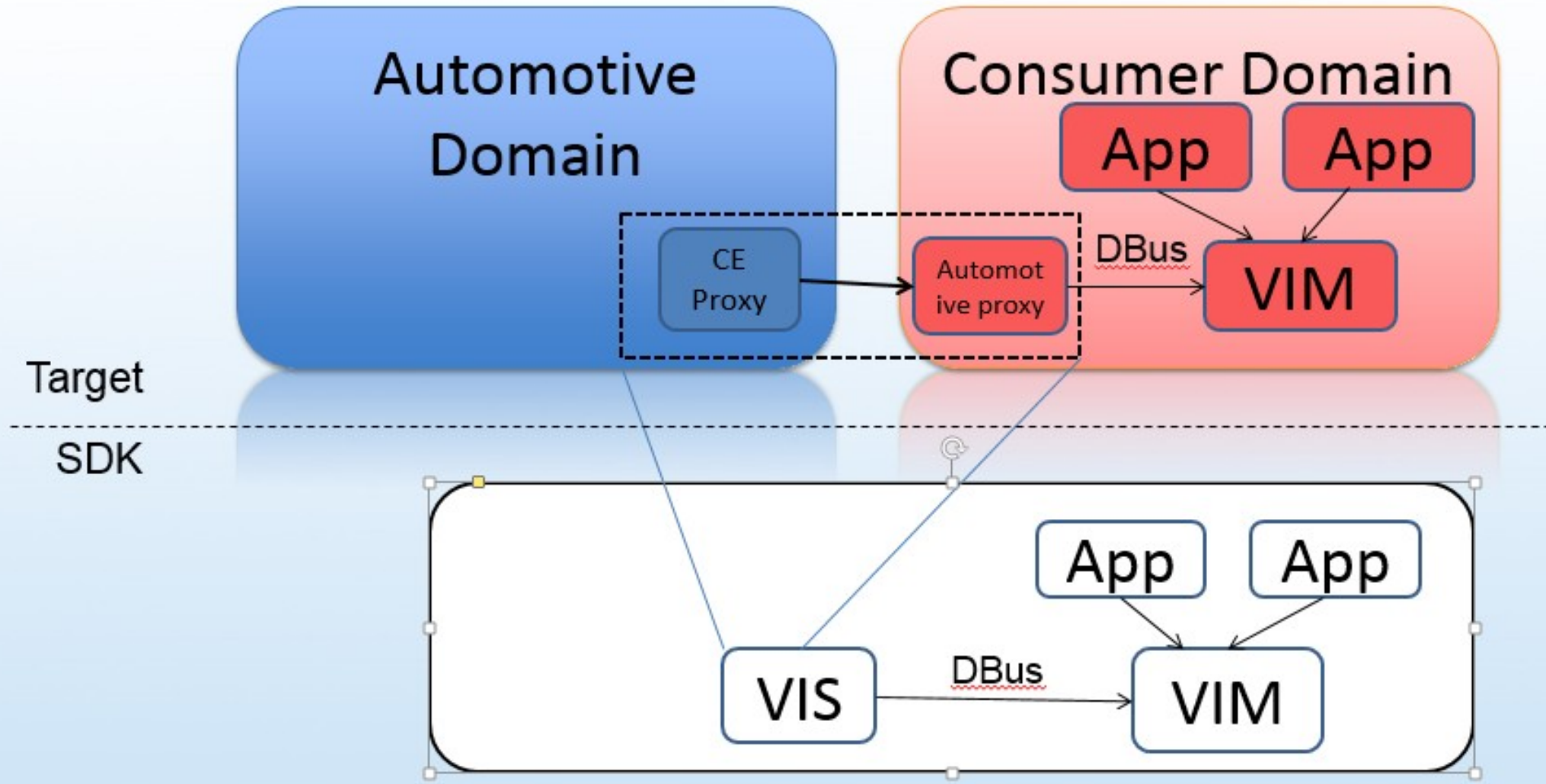
- Leverage APIs from open source community
- Focuses on lowest common denominator for improving performance and memory consumption
- Roadmap items:
 - Adding JavaScript bindings for HTML5 applications is on the roadmap
 - Additional languages bindings (Python, C++, *etc.*)
 - Additional toolkits support



- **cgroups** provide resource control
- **polkit** provides policy decisions for services which talk to multiple applications
- **AppArmor** provides mandatory access control (MAC)





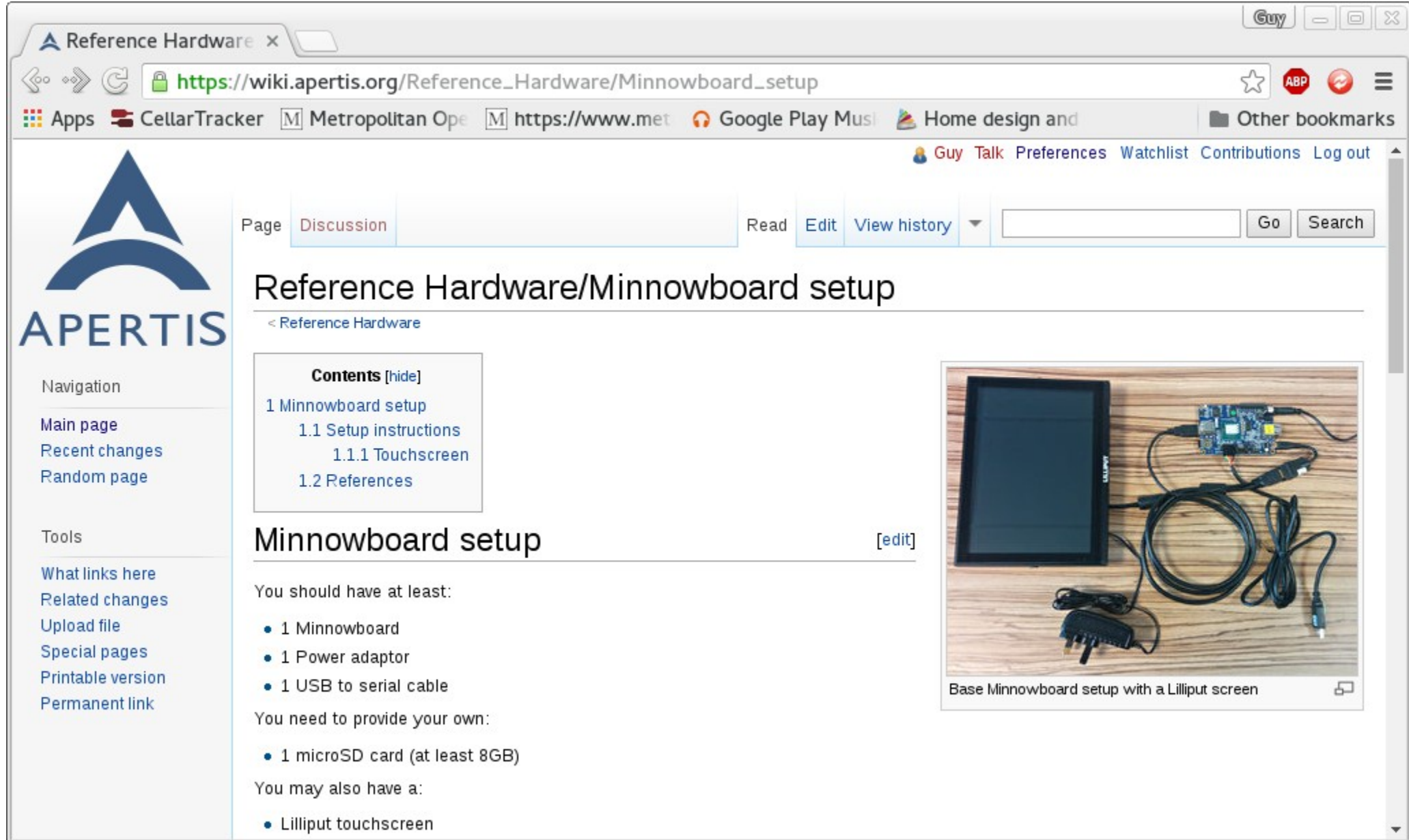


Your virtual machine image

- Eclipse IDE with plugins
- Offline documentation
- Sample code
- Target simulator
- Packaging for App Store

On-line resources

- Populated wiki
- API documentation
- Developer portal for app publication
- Developer forum, mailing lists, ...

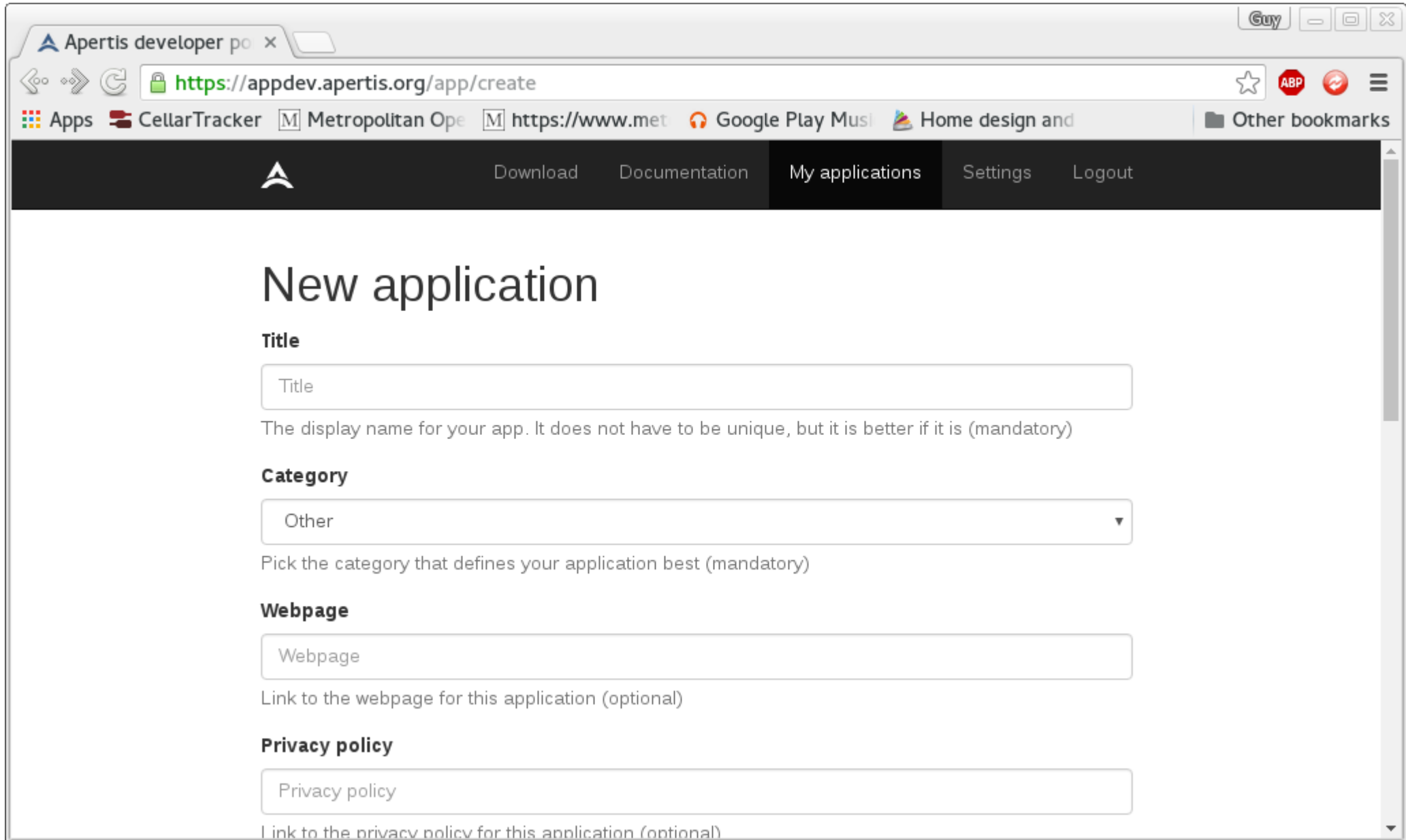


The screenshot shows a web browser window with the following elements:

- Browser Tab:** Reference Hardware x
- Address Bar:** https://wiki.apertis.org/Reference_Hardware/Minnowboard_setup
- Bookmarks Bar:** Apps, CellarTracker, Metropolitan Op..., https://www.met..., Google Play Musi..., Home design and..., Other bookmarks
- User Profile:** Guy Talk Preferences Watchlist Contributions Log out
- Page Navigation:** Page Discussion Read Edit View history [input] Go Search
- Page Title:** Reference Hardware/Minnowboard setup
- Breadcrumbs:** < Reference Hardware
- Contents [hide]:**
 - 1 Minnowboard setup
 - 1.1 Setup instructions
 - 1.1.1 Touchscreen
 - 1.2 References
- Section Header:** Minnowboard setup [edit]
- Text:** You should have at least:
- List-Group:**
 - 1 Minnowboard
 - 1 Power adaptor
 - 1 USB to serial cable
- Text:** You need to provide your own:
- List-Group:**
 - 1 microSD card (at least 8GB)
- Text:** You may also have a:
- List-Group:**
 - Lilliput touchscreen
- Image:** Base Minnowboard setup with a Lilliput screen



- SDK download
- Latest documentation
- Upload applications for validation
- App revenue management
- Developer forum



The screenshot shows a web browser window with the URL `https://appdev.apertis.org/app/create`. The page title is "New application". The form contains the following fields:

- Title**: A text input field with the placeholder "Title". Below it, the text reads: "The display name for your app. It does not have to be unique, but it is better if it is (mandatory)".
- Category**: A dropdown menu with "Other" selected. Below it, the text reads: "Pick the category that defines your application best (mandatory)".
- Webpage**: A text input field with the placeholder "Webpage". Below it, the text reads: "Link to the webpage for this application (optional)".
- Privacy policy**: A text input field with the placeholder "Privacy policy". Below it, the text reads: "Link to the privacy policy for this application (optional)".

The browser's address bar shows several bookmarks: "Apps", "CellarTracker", "Metropolitan Ope", "https://www.met", "Google Play Musi", "Home design and", and "Other bookmarks". The browser's navigation bar includes "Download", "Documentation", "My applications", "Settings", and "Logout".

- License compliance
- Ethical and legal compliance
- Robustness checks
- UI/design compliance
- Version compatibility
- Security checks
- Backwards compatibility checks

- Updated versions can be uploaded through the development portal
- Updates through full validation as for first upload
- Deployed to App Store as soon as validation passes



APERDIS

- 1) Set up virtual machine in VirtualBox
- 2) Create your first Apertis application
- 3) Deploy application to simulator for testing
- 4) Deploy application to target for testing
- 5) Upload application to App Store

- Download SDK from appdev.apertis.org

<https://Appdev.Apertis.org>



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Thank you