CE Linux Forum

2nd Plenary Meeting

San Jose, USA, Friday January, 25th 2005

Mobile Phone Profile WG

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WG Chair

Profile Work Groups

- Intended to address the mismatch between CELF members and CELF's current work program and build participation:
  - CELF's work program has, so far, been driven from operating-system technology perspective.
  - Many CELF members are primarily product builders and do not develop OS functionality, obtaining Linux from a distribution.
  - Product-side CELF members have the most direct perception of technology needs for supporting CE product development.
- Domain-centric working groups, building profiles of technology needs for their specific domains, could be effective in defining CELF's technology-development priorities, leveraging member knowledge of their domains.

The Mobile Phone Profile WG

- The Mobile Phone domain is a prime domain for CELF:
  - Most phone vendors are working on Linux-based products or prototypes.
  - Domain is converging with desktop and media devices, especially at the high end.
  - Phone requirements stress Linux in all the areas CELF has identified as central to CE needs and others (like networking bandwidth).
  - The major phone vendors are participating in CELF.
  - Using mobile-phone requirements to identify technology needs common to many CE domains will ensure focus on activities of high value to many members.
- Many elements of common mobile-phone functionality are not yet available as commercially-qualified open-source components, including such central functionality as browsers.
- Many successful solutions to needs in the mobile-phone domain will also be applicable to other CE domains. The resulting common capabilities will avoid fragmentation and allow vendors to concentrate on differentiating features, rather than on base functionality.
- With a common framework defined, 3d-party and open-source projects will be able to develop new features knowing that they will plug into multiple vendors' profile-compliant products.

Domain Example

A mobile terminal with high capability (including smart phones) with W-CDMA/UMTS and GSM/GPRS Dual feature

Main features

LCD: QVGA(240x320) 64K colors
Camera: 1M-2M pixels
External memory: e.g. mini-SD
External I/F: Bluetooth, USB ,IrDA, etc
Browser: XHTML／WML
Java: MIDP2.0 CLDC
Messaging : SMS MMS／SMIL E-Mail
Others: GPS
OTA Provisioning
DRM
DM

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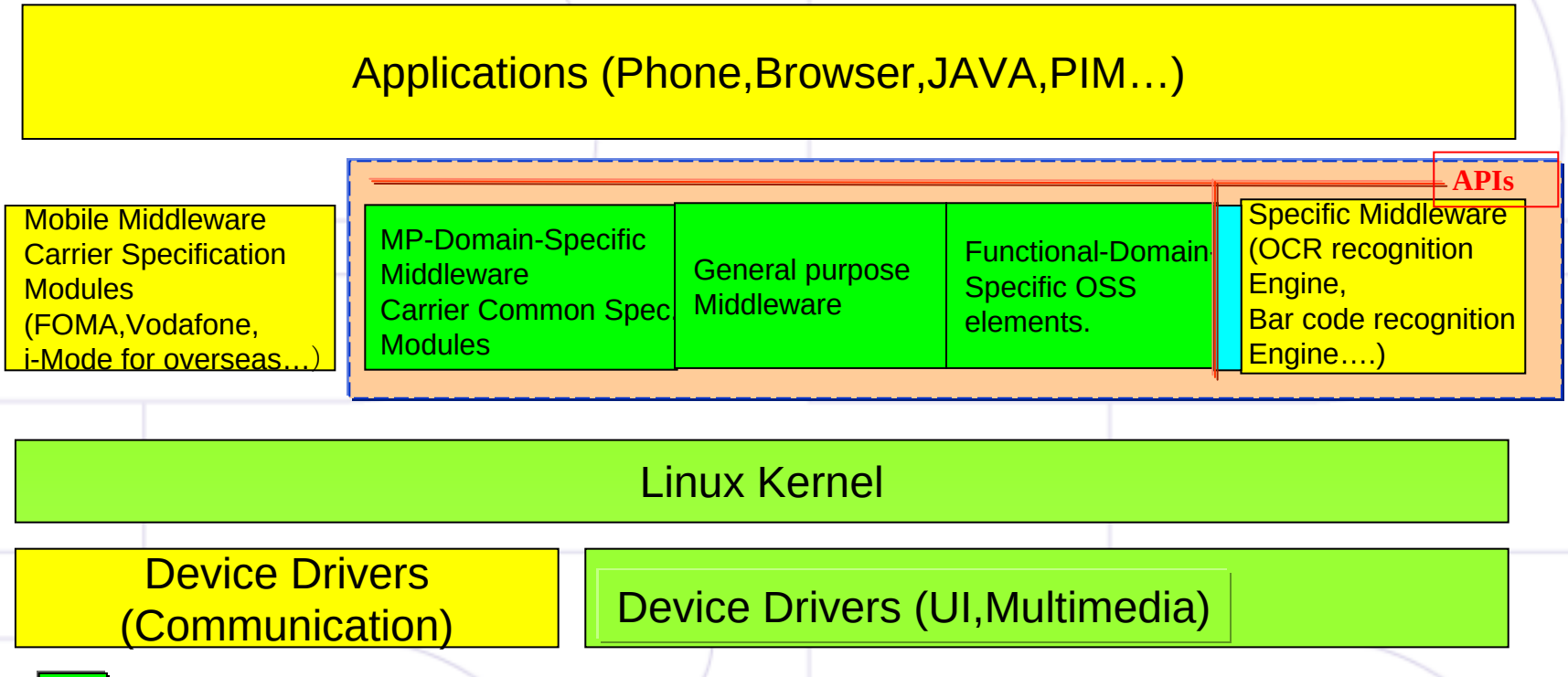
Charter

- The Mobile Phone Profile Working Group (MPP WG) will develop a reference profile for Linux-based mobile-phones in various functionality tiers.
  - Reference architectures (components and basic structure) for platform and enabling services for specific tiers.
  - The reference architectures provide a framework for identification of performance and functionality needs:
    - Mobile-phone-specific requirements for the base kernel.
    - Mobile-phone-specific requirements for enabling middleware and services supporting horizontal (functionality) domains important in mobile phones (multimedia, Database, etc.).
  - A roadmap for the evolution of the profile, projecting need for additional component technologies.

Scope

- The scope of the MPP WG includes Linux interfaces, middleware, APIs, and component implementations supporting phone-specific functionality tiers.
  - Does not include user-level functionality or air-protocol support, except as source of requirements and interfaces
- The WG may recommend to the AG that CELF support or initiate open-source development of profile elements.

Reference Model



MPPWG Priorities

- Standardization of **architecture** and **API**s for mobile phone software providing internet and multimedia services
  - Develop Linux OS for Consumer Electronics that meets requirements for mobile phones
  - Accelerate migration of PC domain internet services to MP domain by use of Open Source Software
  - Establish platform to support common multimedia services with mobile phones

WG Organization

- Chair: Scott Preece (Motorola)
- 57 Participants on mailing list from 25 member companies
  - 15 phone manufacturers
  - 5 chip vendors
  - 5 OS and middleware vendors
  - 2 other interested parties
- Core Group: Motorola, NEC, Panasonic, Samsung

Working Plan

- Periodic teleconferences and face-to-face meetings to negotiate details
- E-mail interaction to provide raw requirements and review work products
- Focused small groups draft specific deliverables
- To-date:
  - Core Group provided initial materials
  - One face-to-face (November)
  - Very limited success at eliciting e-mail interaction

Deliverables / Work Items

- Reference Tiers and Profiles (Draft Available)
- Reference Architectures matched to tiers (First sketch)
- MPP Requirements for Core Linux Components (Not started)
- Middleware Scope and Requirements (Not started)
- Open-Source Projects (Component Inventory)
  - Project/Component list (Not started)
  - Reference implementations (Not started)
- Related organizations (Some identified)
- API Scope and Requirements (Proposal in preparation)
- Roadmap for domain evolution (Not started)
- Schedule (Out of date)

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Reference Tiers Profiles

- Set of “functionality points” – phone categories we will generate profiles for
- A Tier Profile Defines:
  - Typical functionality
  - Variability
  - Hardware performance and characteristics
  - Memory (RAM, ROM, Removable)

Reference Tiers Proposal

- WG has identified and characterized four tiers:
  - Smart Phone
  - Media Phone
  - Feature Phone
  - Basic Phone
- Described in terms of “typical” capabilities (i.e., qualitative tiering)

Reference Architectures

- Reference Architecture is a commonly understood structuring of systems
  - Common components
  - Common subsystems
  - Relationships, dependencies, interactions
  - Variabilities

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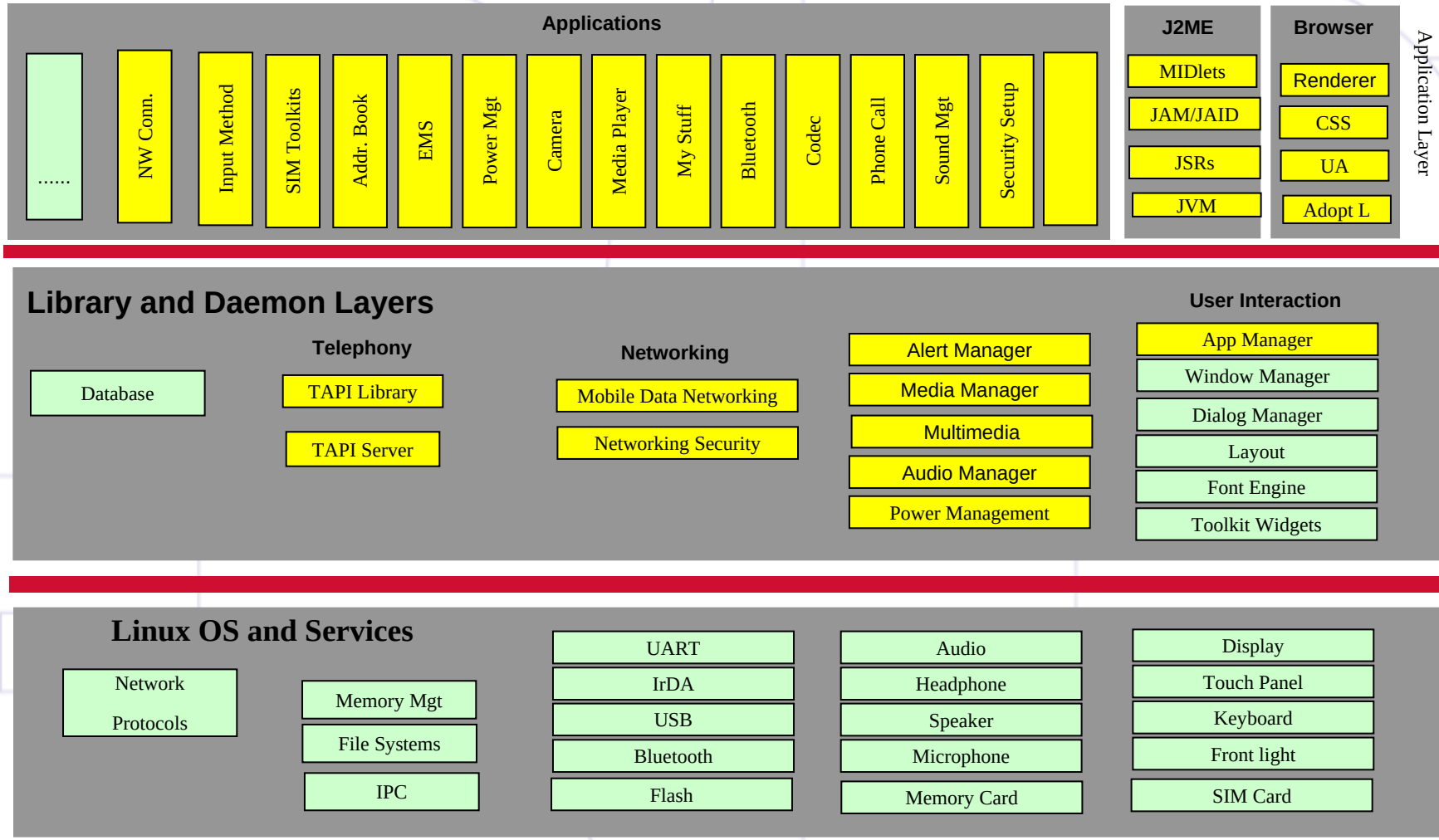
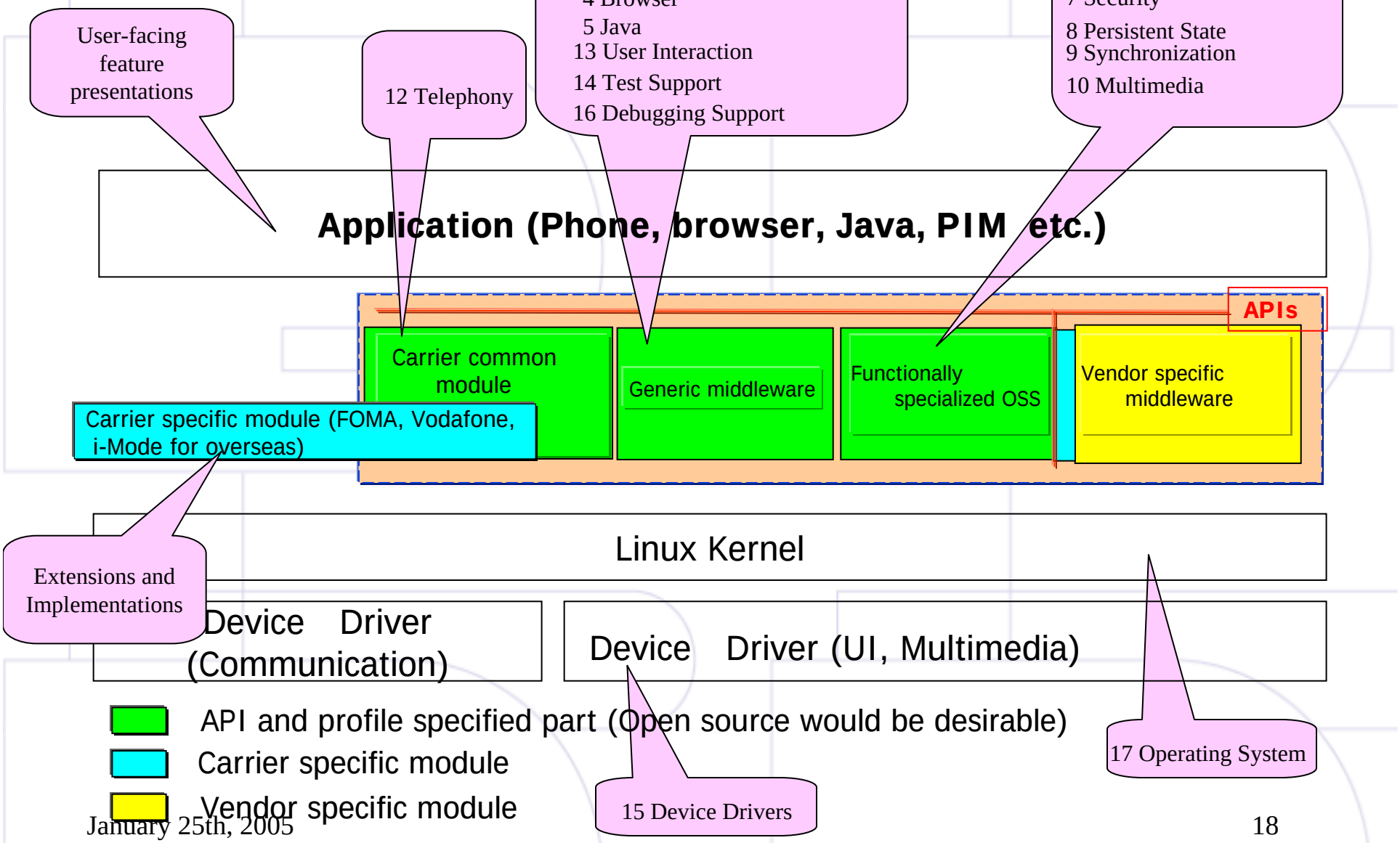
Example Reference Architecture



API Scope and Requirements

- Core group proposed that an API for third-party application builders should be a high priority
- Ideally this should be a “real” API, known to provide functionality needed to support the full scope of the domain tier
- NEC and Panasonic have jointly provided a proposed API and implementation
- Proposal is meant as a starting point – assume the WG would evolve it for consistency, organization, and needs of additional technologies

Relation with MPPWG Component Inventory List



Schedule

- Initial Proposal:
  - Phase 1 (by December 2004)
    - Technical scope defined
    - Architecture drafts approved by WG members
    - First round of requirements available
  - Phase 2 (by March 2005)
    - Document deliverables sent to AG for review
  - Phase 3 (by June 2005)
    - Patches implementing available reference architecture components provided to AG