

Wireless Internet Platform for Interoperability (WIPI) on Linux

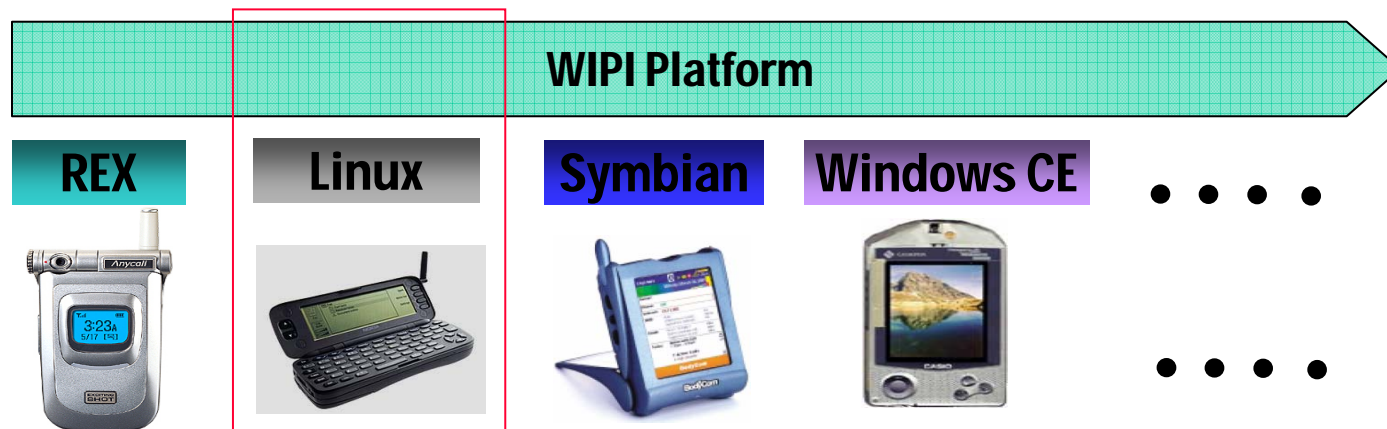
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LINUX + WIPI

- ❑ Deficiency of contents running on smartpone, compared with existing mobile phone
 - Porting the sharable mobile platform that can be adopted to both smartpone and existing mobile phone – It makes existing contents reusable without any efforts
 - As mobile platform, **WIPI (Wireless Internet Platform for Interoperability)** is prevail in Korean telecommunication industries
- ❑ Linux may become the preferred OS in full-featured mobile devices
 - open-ness and cost



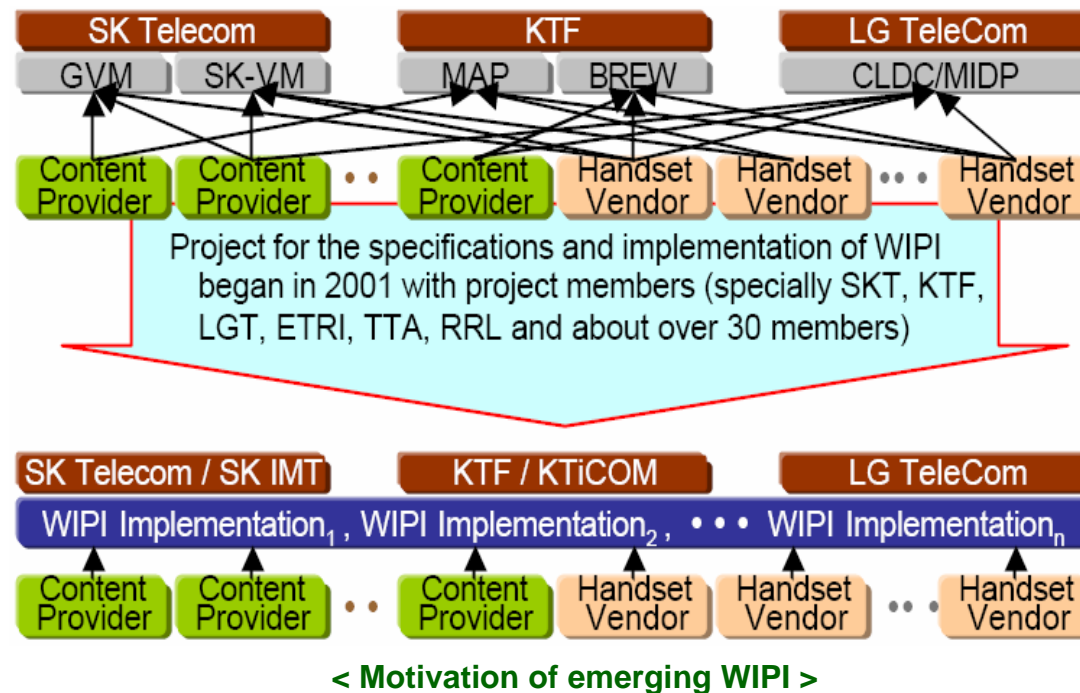
What is WIPI ?

- ❑ Application execution environment specification for the mass market handsets
- ❑ Specification embodies the knowledge of the carriers, handset vendors and mobile contents developers
- ❑ Developed under the guidance of KWISF and ETRI
- ❑ Made official standard in Korea through TTA
- ❑ About more 30 organizations joined WIPI forum (<http://www.wipi.or.kr>)



WIPI Initiation

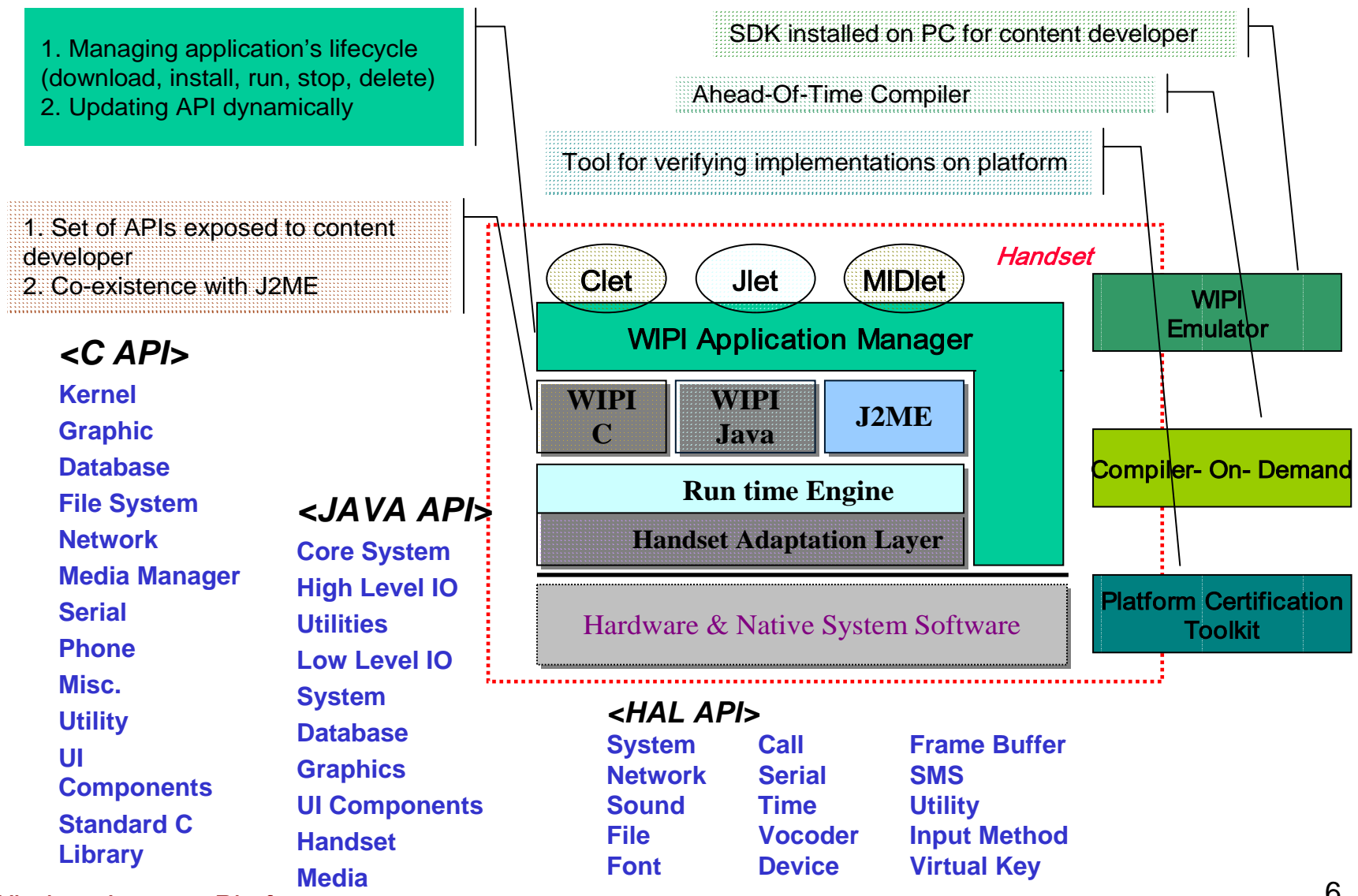
- ❑ Three big operators (SK, KTF, LGT) had different mobile platforms
 - Paying additional development cost due to modification which makes the contents suitable for each mobile carriers
 - Suppressing freedom of content use by allowing proprietary wireless networks



WIPI Functional Overview

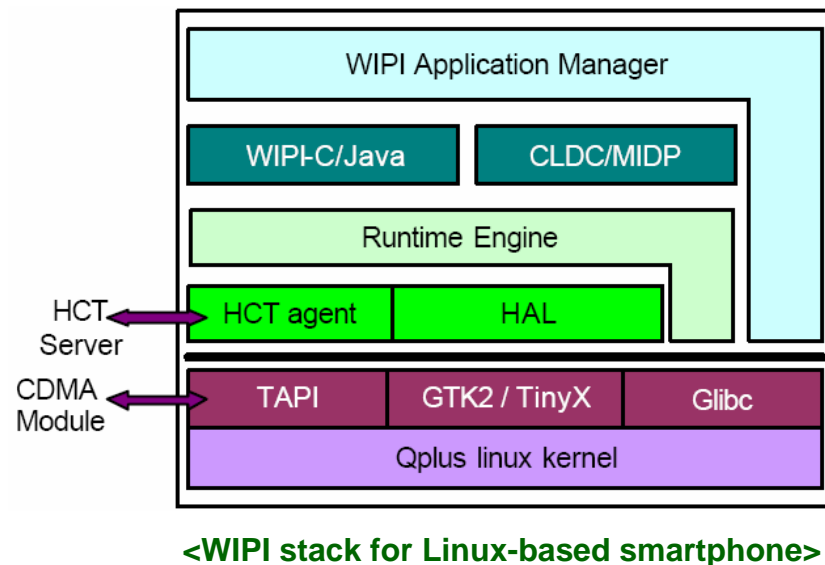
- ❑ Support for **multiple** programming languages: C/C++ and Java
- ❑ Download and execution of all programs as **binary code**
- ❑ **Concurrent execution** of multiple programs in independent memory spaces, with IPC capability
- ❑ Fine grained platform security
- ❑ Dynamic memory Management
 - Automatic and manual garbage collection with memory compaction
 - Automatic memory de-allocation up on program exit
 - Shared memory management
- ❑ Application management by **WAM** (**WIPI Application Manager**)
- ❑ Support for internationalization: Unicode, locale
- ❑ Dynamic updating APIs and components
 - Download and dynamically link additional APIs and components
 - Update already installed APIs and components
 - Update application manager capability and/or UI

WIPI Architecture



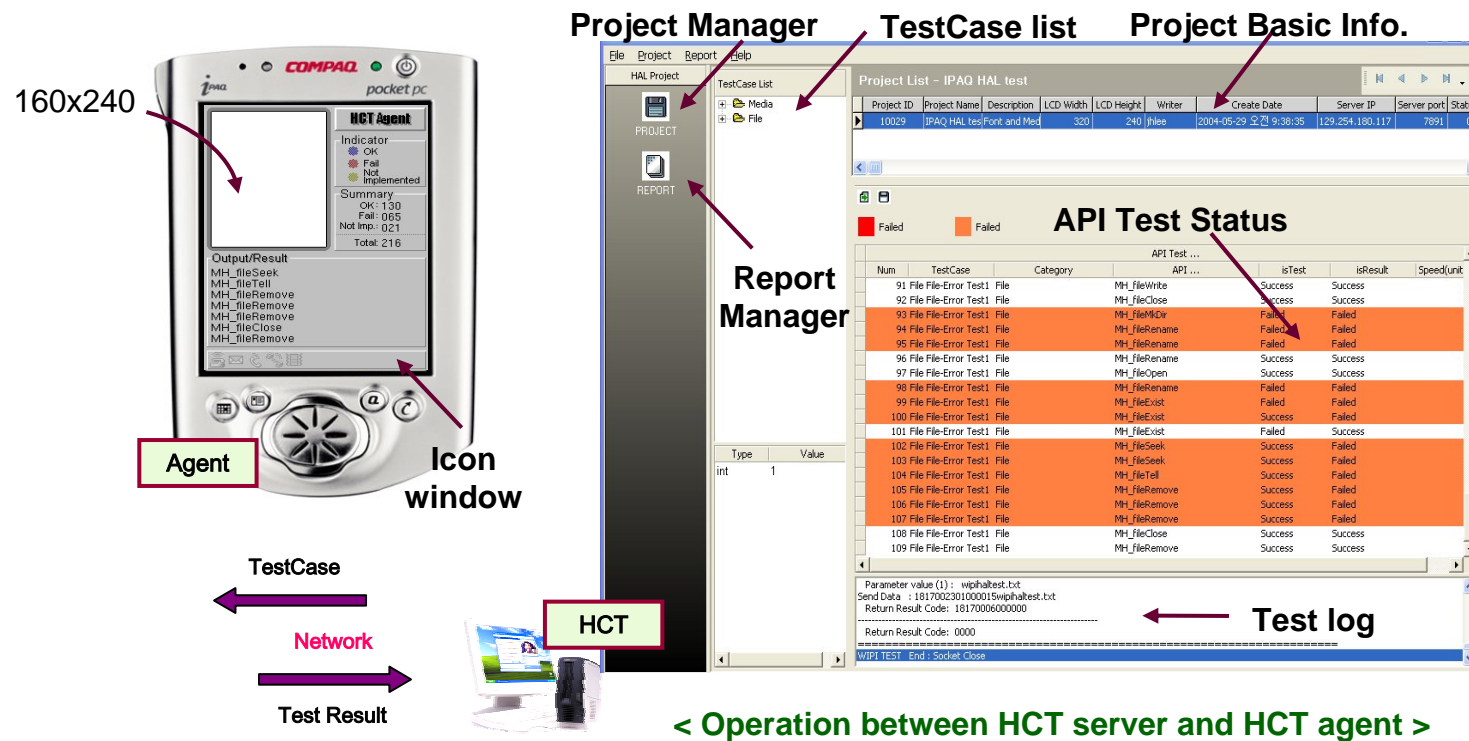
WIPI Reference Implementation for LINUX

- ❑ TAPI provides telephony API to handle modem or CDMA module
- ❑ GTK/TinyX-based GUI
- ❑ HAL is implemented by using native S/W(TAPI, GTK/Tiny-X, Glibc ...)
- ❑ HCT agent is a kind of linux application that can communicate with HCT server to verify the HAL implementation on linux-based smartphone
- ❑ ETRI's embedded linux(**Qplus**) is used



Porting & Verifying[1/2]

- ❑ To make contents for handset executable without modification for iPAQ
 - Display window size is reduced to 160 x 240
 - Vibrator and telephony-related operations in handset are replaced by icons
- ❑ HCT(HAL Certification Toolkit) is an easy-to-use GUI-based tool for testing, verifying, certifying the HAL implementation on linux-powered mobile device

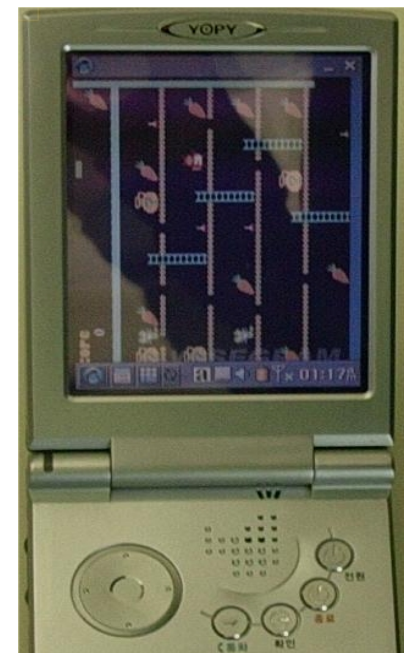


PCT & DEMO

- ❑ PCT(Platform Certification Toolkit) checks whether or not API is compliant to WIPI Specification.
- ❑ Cllets already developed from WIPI emulator can be directly executed on real target without any change, except image size



Samsung's KingFish



Gmate's YOPY-3700 smartphone