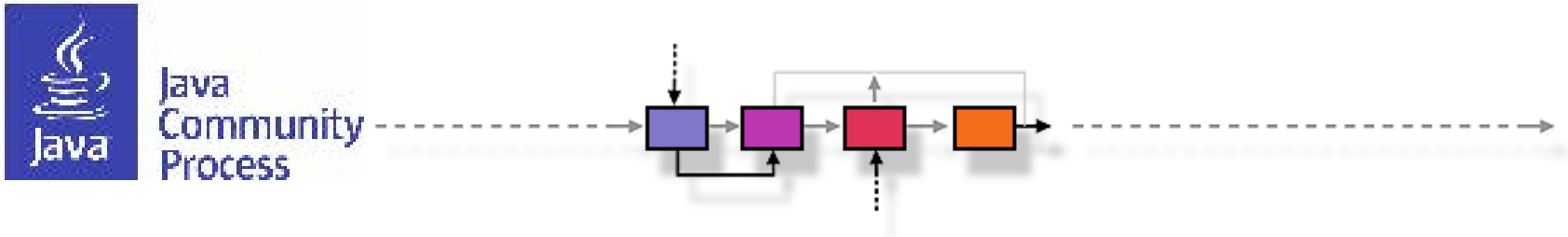
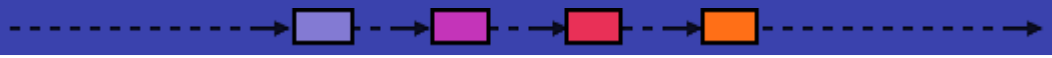


Java™ MicroEdition Connected Limited Device Configuration 8 (CLDC 8) – JSR-360

May 14, 2013

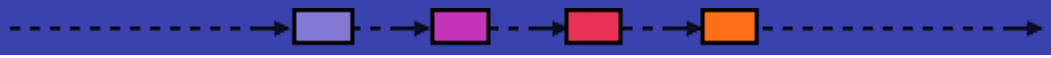
Michael Lagally, Roger Riggs (SpecLeads)

About this JSR



- CLDC has been the Java platform for connected devices including feature phones for many years. It is a platform for devices with very limited memory and CPU power.
- JSR360 Scope:
  - update of the CLDC platform with support for Java 8 language features, align APIs with Java SE and provide new library APIs.
  - core platform of Java MicroEdition 8 and the common runtime for other JSRs (e.g. JSR 361)
  - targets small embedded devices such as wireless modules, smart meters, feature phones, healthcare monitoring, sensors and other M2M devices.

Introduction

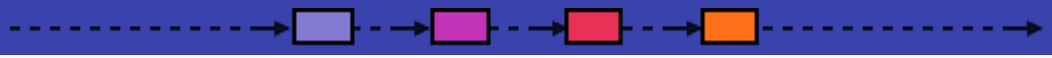


- Target platform: Java ME 8

- JSR 360 is a follow up of JSR 139 (CLDC 1.1)
- JSR 360 consolidates the Generic Connection Framework (GCF) among CDC 1.1.2, MIDP and JSR 197.

- Tailored for small footprint devices (1-10 MB)

Java Technology for Embedded Devices



Java Community Process

Java ME Platform Architecture




Vertical Specific APIs

Device Access	Wireless Messaging	SATSA	Vector Graphics	Content Handler
Vertical Specific APIs	Bluetooth	Media	3D Graphics	Sensors
Location	Contactless Communication	XML	OpenGL 1.1	Personal Info

On-Device I/O Peripheral Access (*)

Peripheral I/O API

Application Environment

Java ME Embedded Profile (aka IMP –NG+)

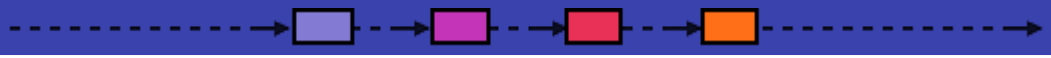
Java VM

CLDC 8 (with Support for Java 8 Language Features)

Java Community Process

(*) not yet a JSR proposal

History



- JSR Submitted: JavaOne San Francisco September 2012

- Stages so far:
  - JSR Review Oct 2-15, 2012
  - JSR Review Ballot Oct 29, 2012
  - EG Kickoff February 15th

- Current JCP stage:

  Early Draft Review April 15th - May 14th

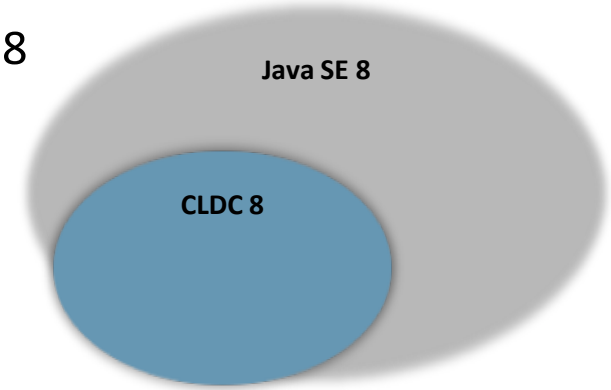
Java Community Process

Technical Scope and Features

- **CLDC 8 is an evolutionary update for CLDC 1.1.1 to bring the VM, Java Language and libraries in alignment with Java SE 8**

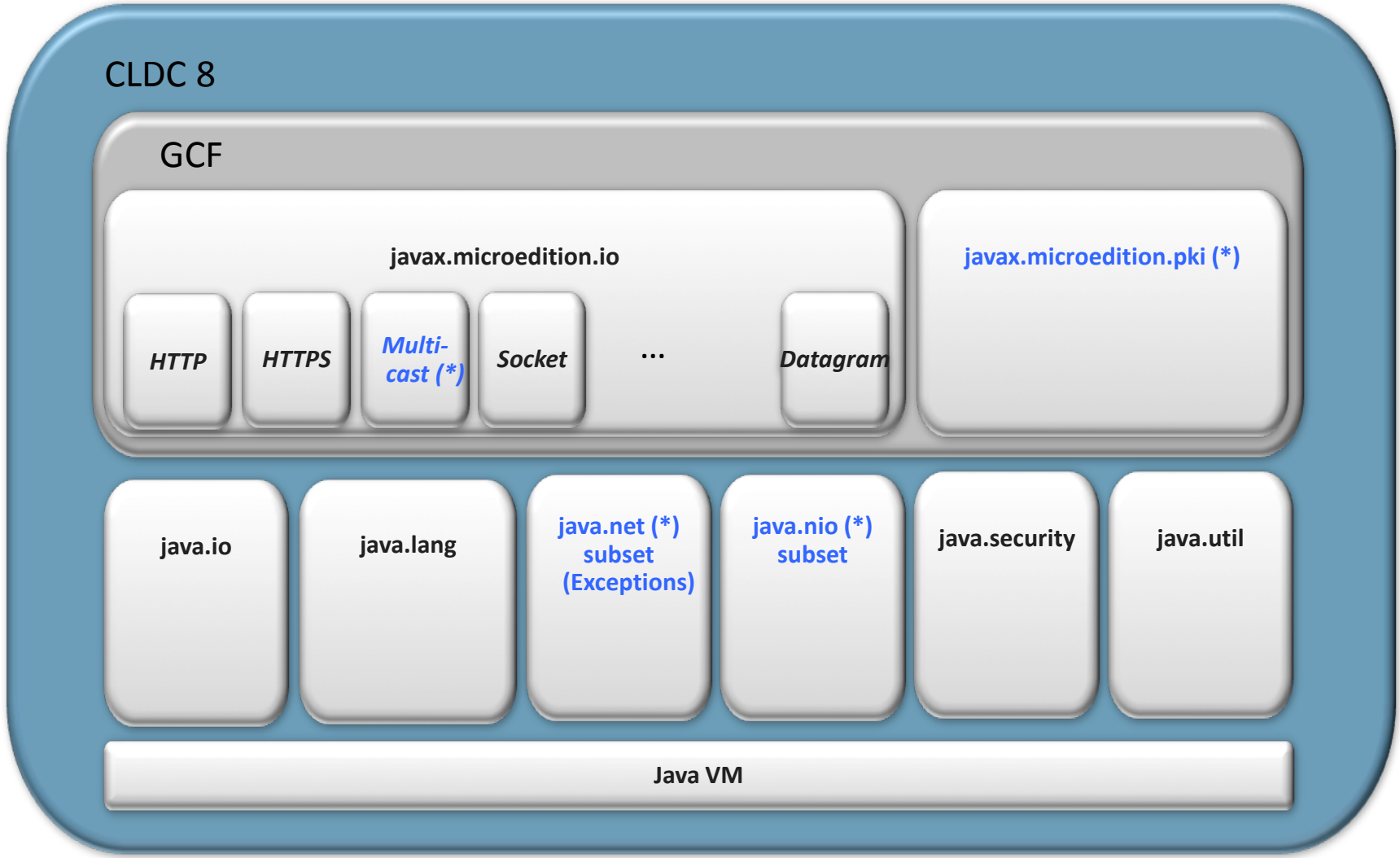
- **Key Features**
  - Synchronize with Java SE 5/6/7/8 Language Features into ME
  - Introduce requested Java SE API Library Features
  - Virtual Machine Update
  - Remain as small as possible - footprint optimizations

- **Specification Requirements**
  - CLDC 8 to be an extended strict subset of Java SE 8
  - Consolidated Generic Connection Framework
  - Backward compatibility



Java Community Process

CLDC 8 architecture



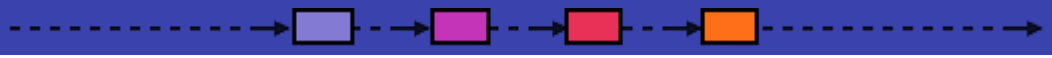
(*) New in CLDC 8

Sample target device

- MCBSTM32F200
- Core: STM32F207IG ARM Cortex™-M3
- Frequency: 120MHz
- On-Chip Memory: 1MB Flash & 128KB RAM
- External Memory: 8MB NOR Flash, 512MB NAND Flash, 2MB SRAM, 8KB I^2C EEPROM with NFC interface
- Display: 2.4 inch Color QVGA TFT LCD with resistive touchscreen
- Power: via USB (micro) connectors or Power jack (8V-12V)
- Peripherals: Ethernet, USB 2.0 & USB Host, CAN, Serial/UART, MicroSD, 5-position Joystick, 3-axis digital Accelerometer, 3-axis digital Gyroscope, ADC Input, Audio Line-In/Out, Digital Microphone, Digital VGA Camera
- Debug Interface: JTAG

Source: http://www.keil.com/mcbstm32f200/

The JSR 360 Expert group



Spec Leads

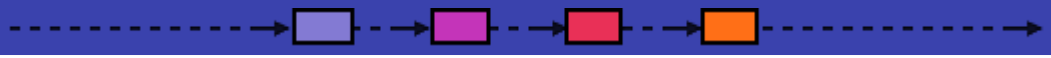
- Michael Lagally — Oracle
- Roger Riggs — Oracle

Expert Group

- Stefano Andreani
- Yagamy Huang — Aplix Corporation
- Werner Keil
- Thomas Lampart — Cinterion Wireless Modules GmbH
- Hernan Perrone — TOTVS
- Erkki Rysä — North Sixty-One Ltd (Nokia JSRs)
- Thiago Galbiatti Vespa
- Yimin Ye — Nokia Corporation

Java Community Process

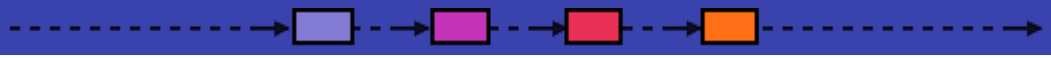
EG logistics / working model



- **EG Working model:**
- Regular EG phone conferences (1-2 hours, weekly / biweekly)
- All CLDC 8 EG documents are hosted on java.net
- The Downloads archive is available at:
  http://java.net/projects/jsr360/downloads
- EG Mailing List with technical discussions and meeting minutes:
  jsr360-experts@jsr360.java.net
- An issue tracker is available at:
  http://javafx-jira.kenai.com/browse/MESPEC/component/10660

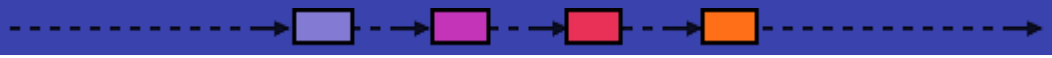
Java Community Process

Publicity



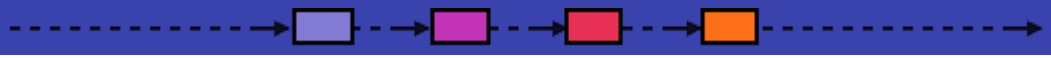
- Oracle Open World / JavaOne San Francisco 2012
  - "CON4247 – CLDC: The Java Platform for Feature Phones and Low-Footprint Embedded Devices"
  - https://oracleus.activeevents.com/connect/sessionDetail.ww?SESSION_ID=4247
- Session proposed for Oracle Open World / JavaOne San Francisco 2013

Collaboration with other community groups



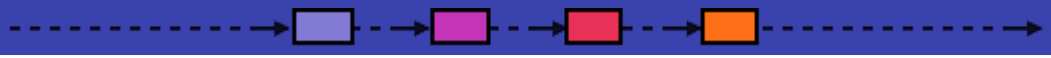
- Close collaboration with
  - JSR-361 “ME - Embedded Profile”
  - Peripheral I/O API – new JSR

Schedule



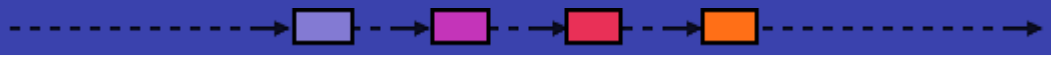
- Public Review: August 2013
- PR Vote: October 2013
- Final Draft: November 2013
- Final Release: March 2014

RI and TCK development



- RI and TCK are developed by Oracle engineering

Participation and transparency



- JSR page on JCP.org
  - http://jcp.org/en/jsr/detail?id=360

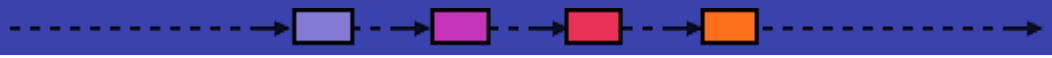
All specification work, specification drafts and all expert group communication are hosted as a java.net project.

https://java.net/projects/jsr360/pages/Home

All EG communication is copied to the observer alias:

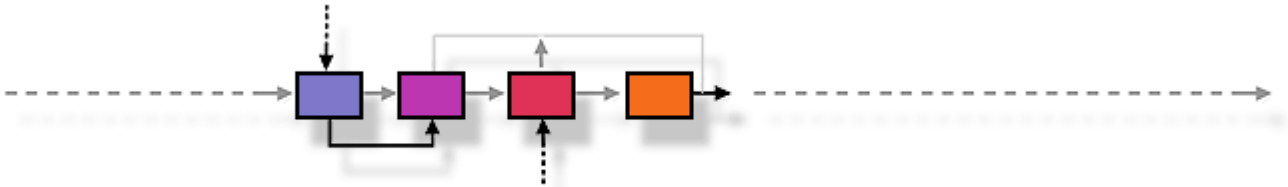
jsr360-observers@jsr360.java.net

Issue tracker



- The JSR 360 issue tracker is at: http://javafx-jira.kenai.com/browse/MESPEC/component/10660

- Total number of EG issues: 4, (2 new, 2 in progress)



Thank you!
http://jcp.org