



# The JCP and the future of Java

Patrick Curran

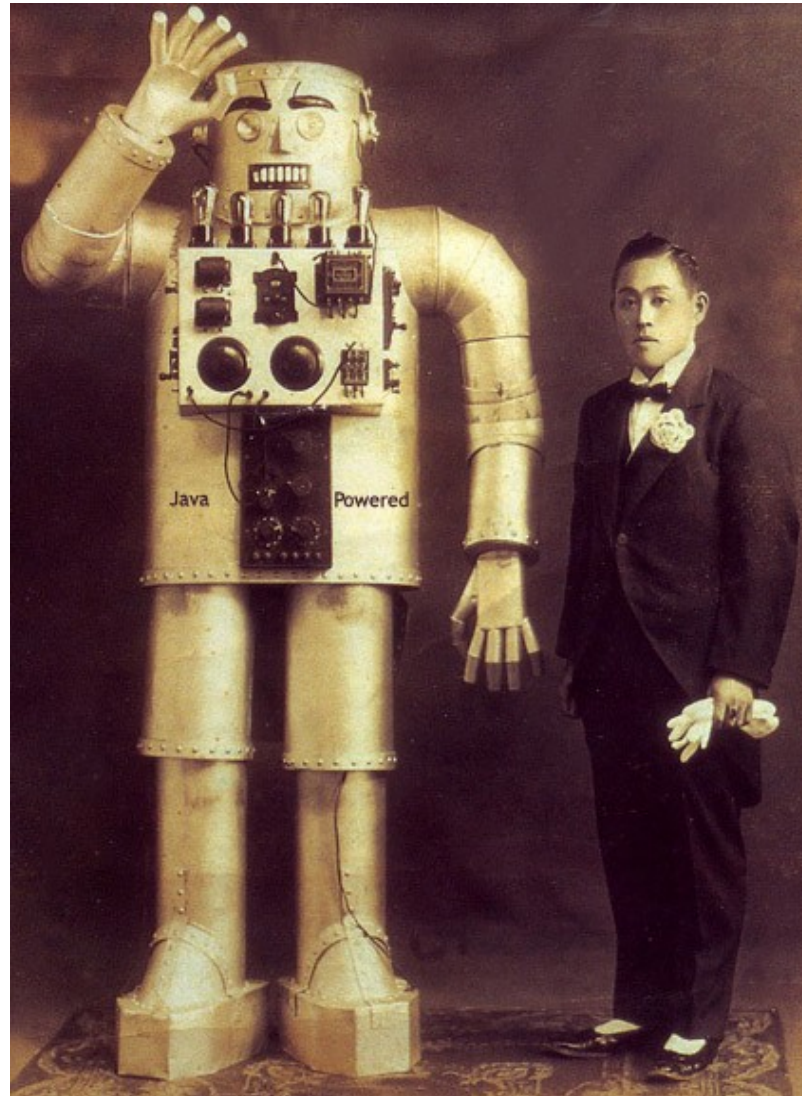
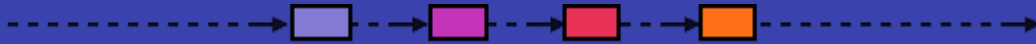
*JCP Program Chair*

*[patrick@jcp.org](mailto:patrick@jcp.org)*

*<http://jcp.org>*

*July 2011*

# Welcome

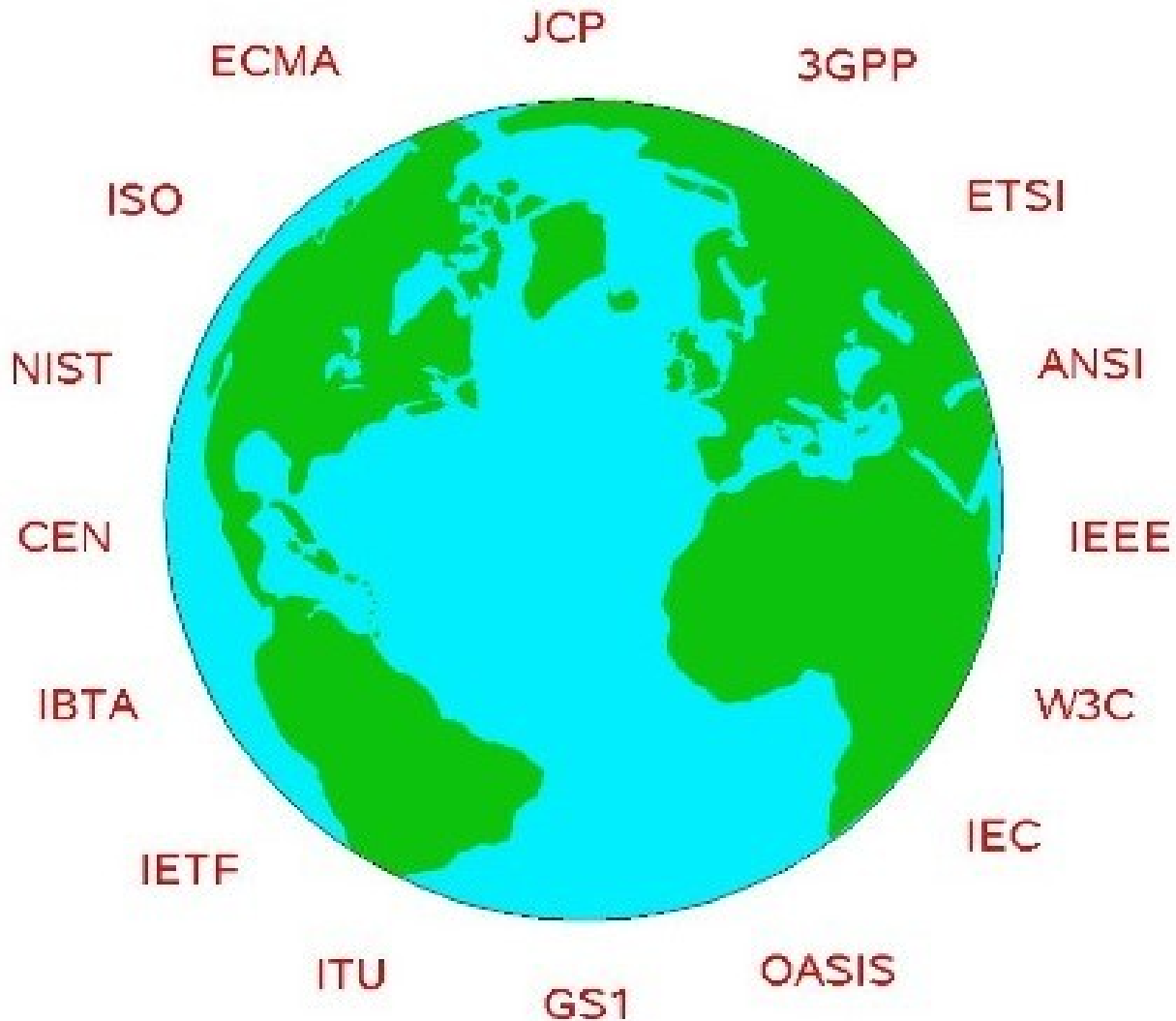


# Agenda



- Standards, Java, and the JCP
- How the JCP works
- The JCP and Open Source
- Current events
- Participation

# Why standards?

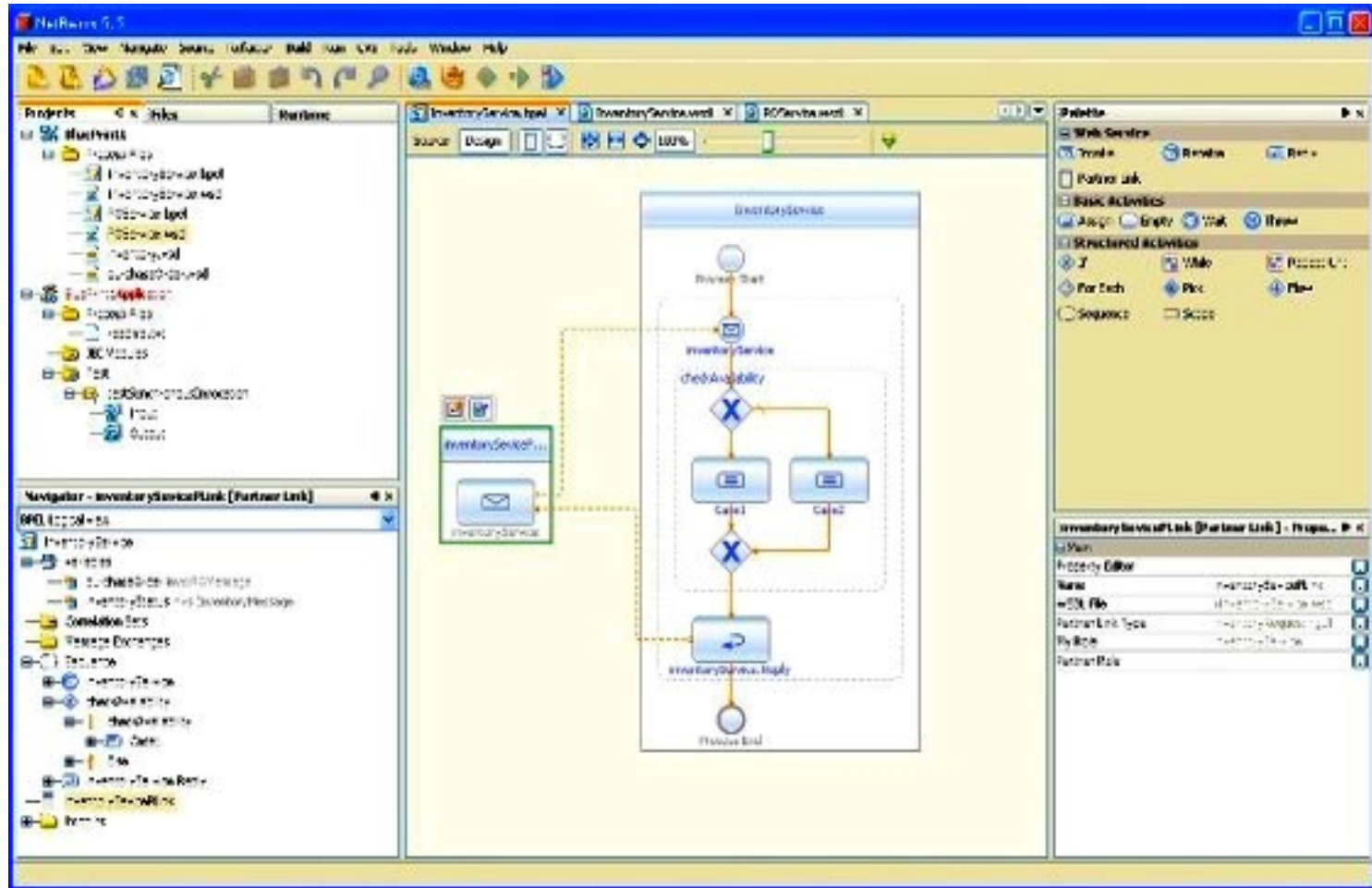


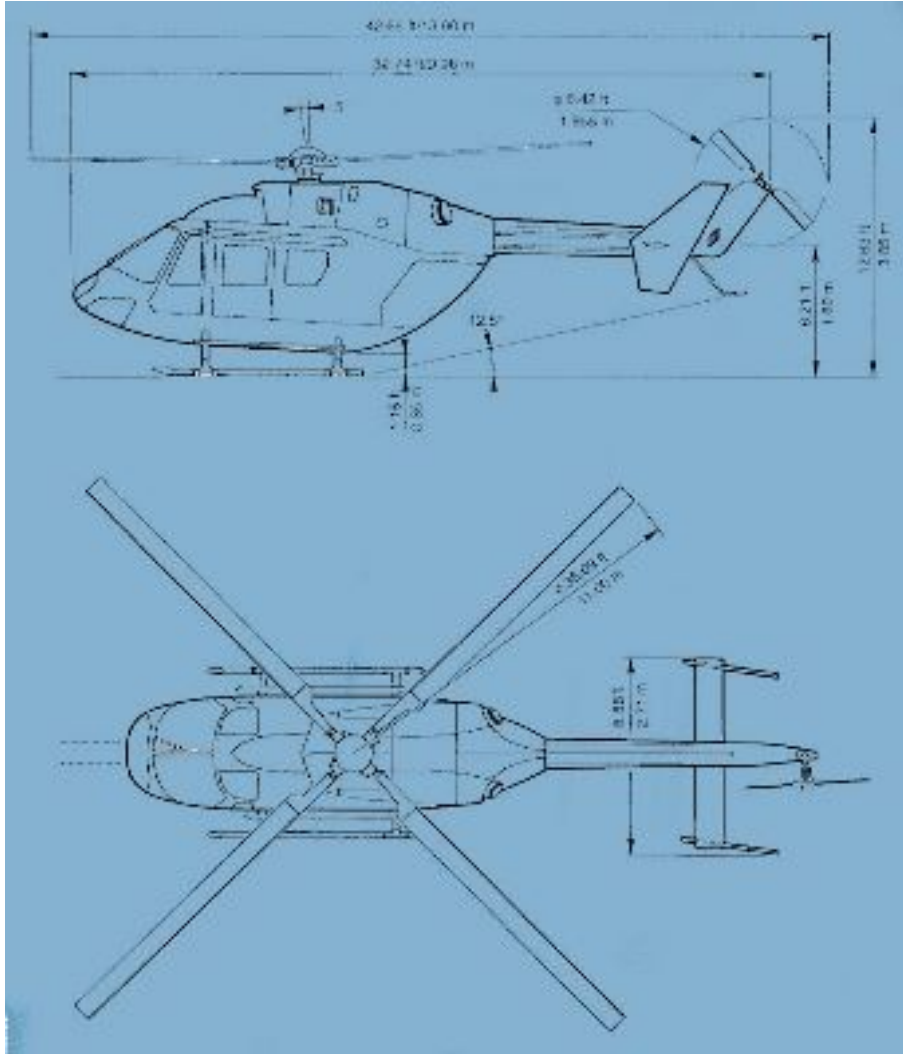
# Languages & protocols





# Interfaces





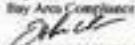
# Certification



**DECLARATION OF CONFORMITY**


This device is in conformance with Part 15 of the FCC Rules and Regulations for Information Technology Equipment. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Model:	SV-M0907113C
Responsible Party:	SHARPVISION CO., LTD.
Address:	THE 4TH FLOOR, NO.4 TANGDONG EAST ROAD, TIANHE DISTRICT, GUANGZHOU, CHINA
Contact Person/Title:	STONE/ DIRECTOR
Telephone:	+86-20-85572236
Fax:	+86-20-85543122

Equipment Class:	FCC Part 15 Class B
Product Type:	TFT LCD MONITOR
Report Number:	85203071301
Issuance Date:	July 21, 2005
Tested by:	Buy Area Compliance Laboratory Corp.
Signature of Officer:	 Ada Y. Chan - Certification Manager

We, the responsible party:  
**SHARPVISION CO., LTD.**  
declare that the product  
**SV-M0907113C**  
was tested to conform to the applicable FCC Rules and regulations. The method of testing was in accordance to the most accurate measurement standards possible, and that all necessary steps have been reinforced to assure that all production units of the same equipment will continue to comply with the Federal Communications Commission's requirements.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Name: \_\_\_\_\_ Title: \_\_\_\_\_





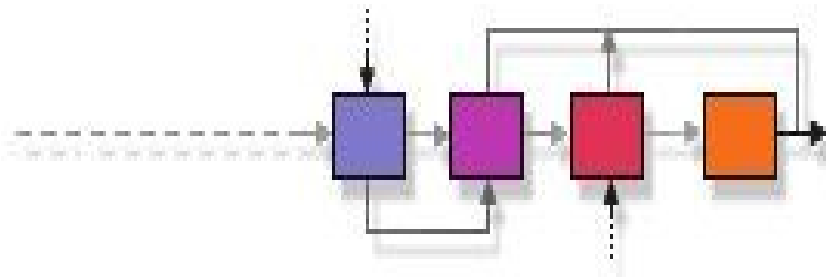
# No vendor lock-in



# Industrial-strength systems

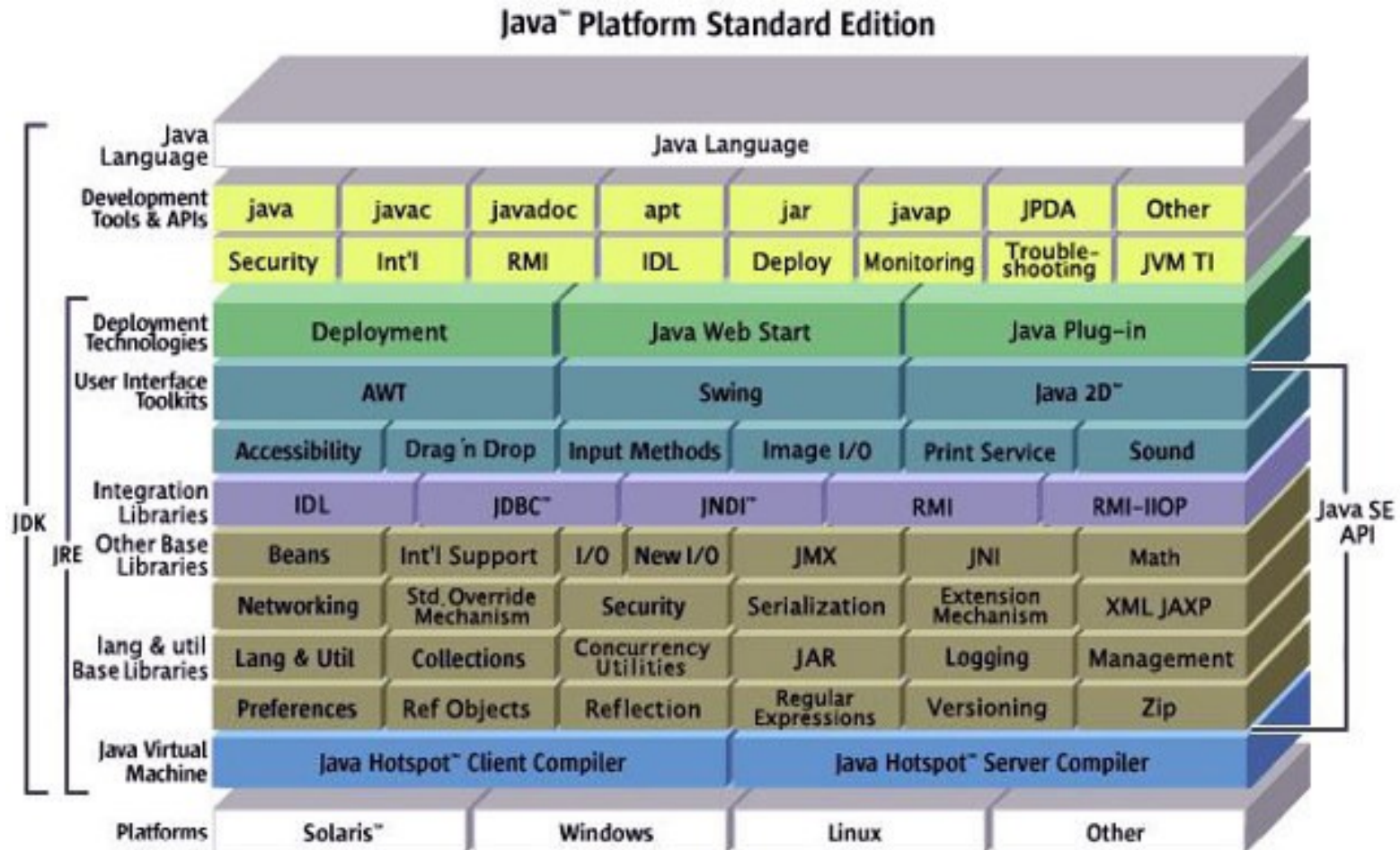


# Java standards



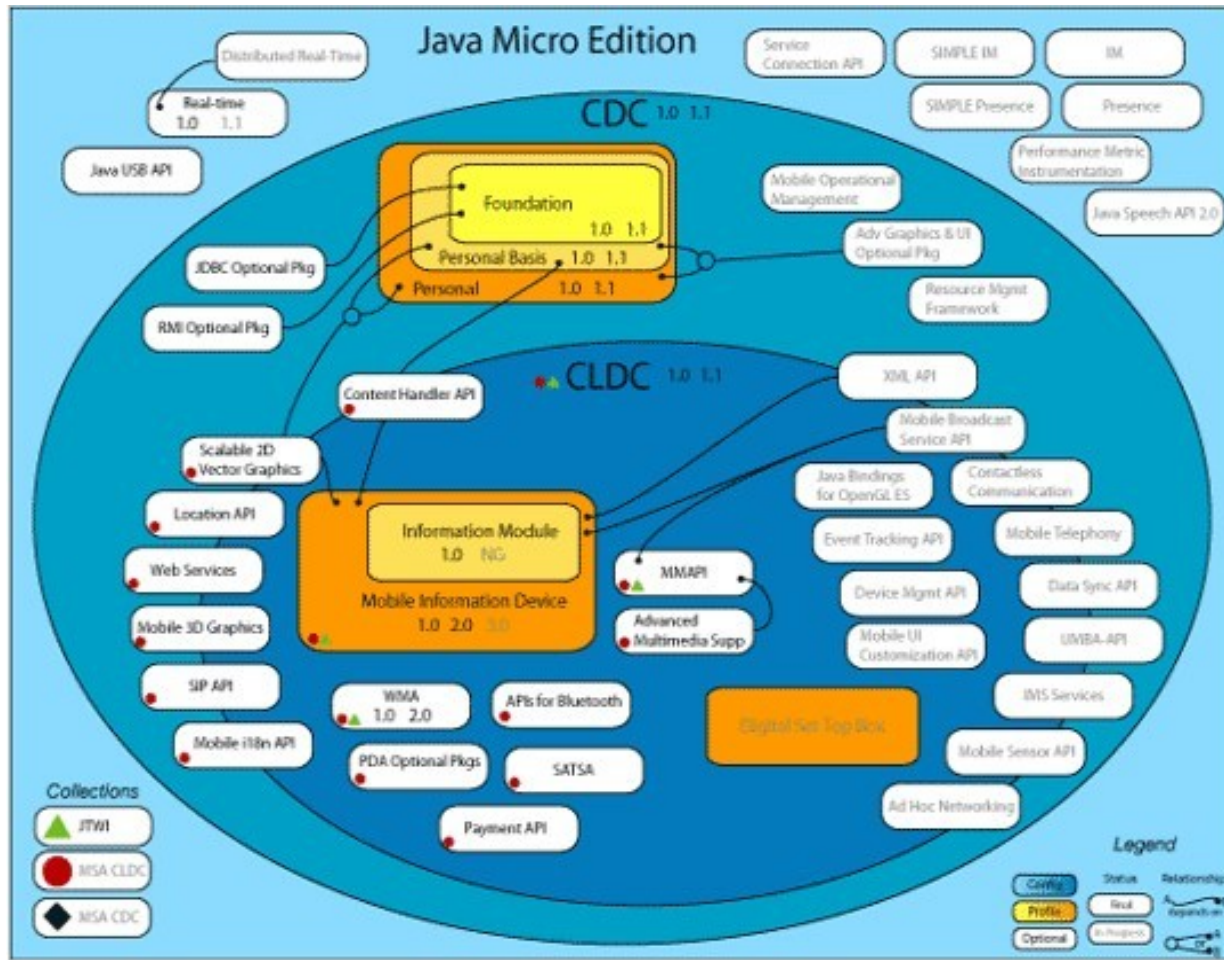
Community Development of  
Java Technology Specifications

# Java Standard Edition



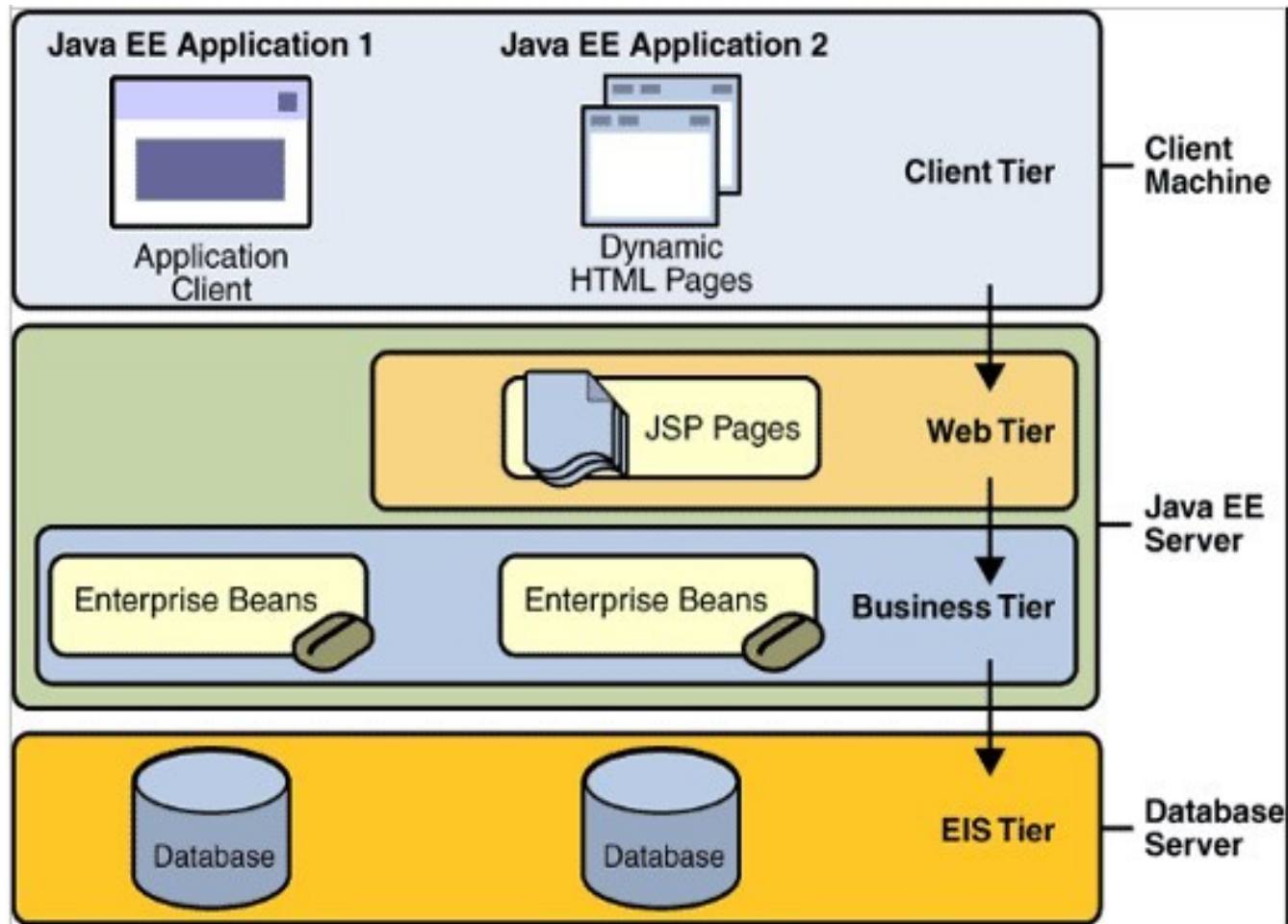


# Java Micro Edition





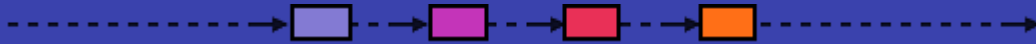
# Java Enterprise Edition



# How the JCP works



# How we do it



- Java Specification Requests (JSRs)
  - A JSR is a single version of a Java specification.
  - JSRs are led by a community member (the *Spec Lead*), with a group of interested members (the *Expert Group*) helping with the day-to-day decisions and work.
  - Any community member can submit and lead a JSR.
- Each Expery Group must deliver:
  - The Specification
  - The Reference Implementation (RI)
  - The Technology Compatibility Kit (TCK)

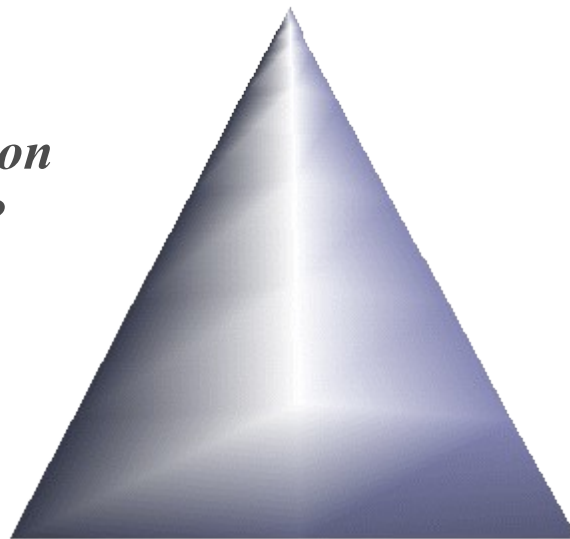
# The compatibility triangle



Specification

*In the specification  
unambiguous?*

*Can you build an  
implementation?*



**Technology  
Compatibility Kit**

**Reference  
Implementation**

*Is the TCK correct?  
Does the RI conform?*

# Deliverables





# Compatibility testing

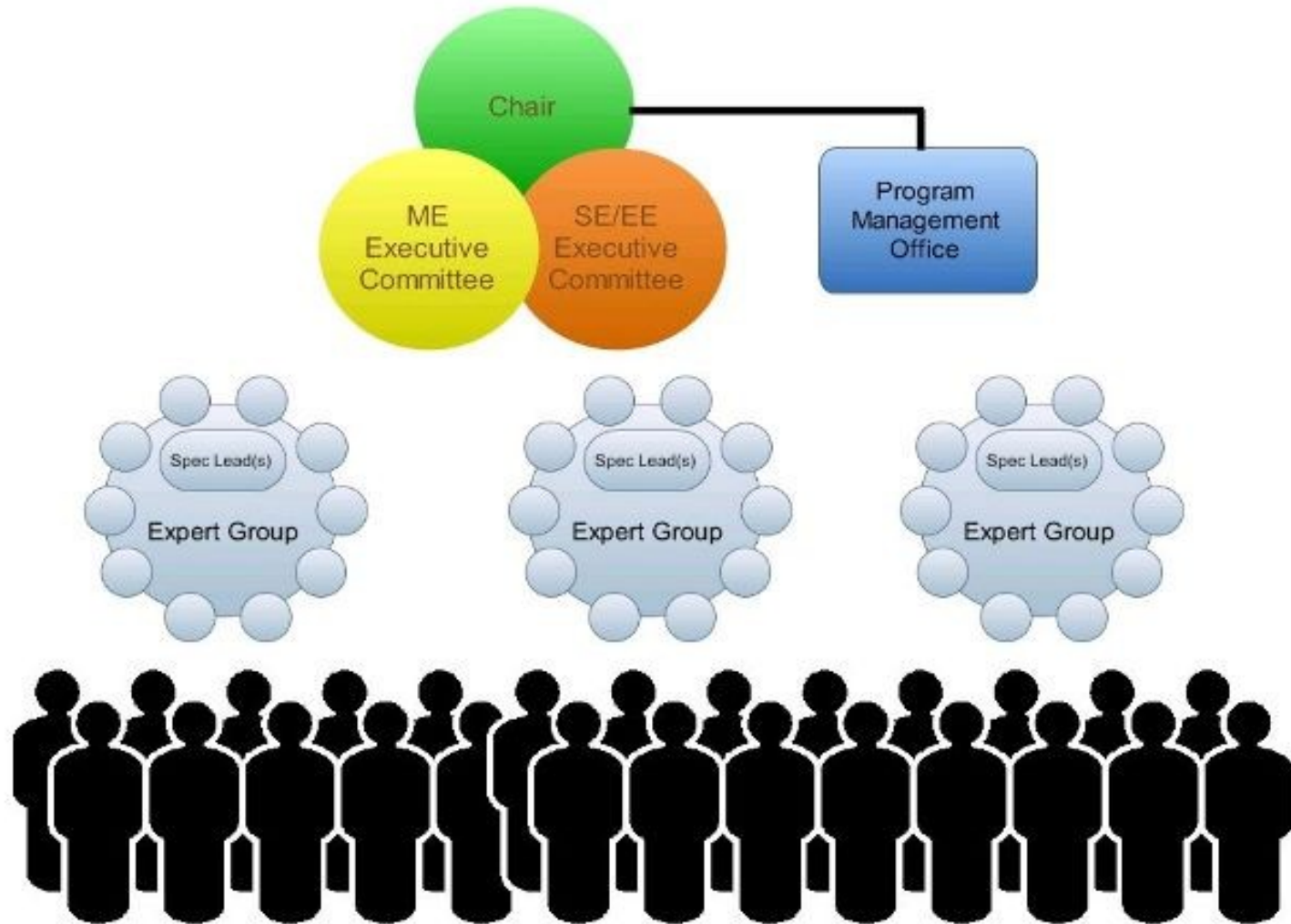


# Governance

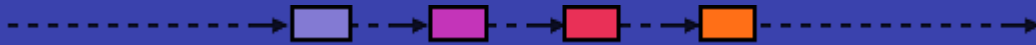


- Java Specification Participation Agreement (JSPA)
  - A legal contract between members and Oracle.
  - Addresses Intellectual Property (IP) grants and the terms under which the spec, RI, and TCK should be licensed.
  - <http://www.jcp.org/aboutJava/communityprocess/JSPA2.pdf>.
- JCP 2: Process Document
  - Defines the governance of the organization.
  - Defines the processes that are used to submit define, develop, review, approve, and maintain specifications.
  - Defines the obligations to produce an RI and TCK, and to define a test challenge process.
  - <http://jcp.org/en/procedures/jcp2>.

# Organization



# Roles



- JCP Chair
  - Leads the organization and manages the PMO.
- Program Management Office (PMO)
  - Manages day-to-day operations of the organization.
- Executive Committees
  - Define JCP governance, processes, and contractual terms of membership.
  - Vote on JSRs at defined stages through the process.
- Expert Groups
  - Create JSRs (write the spec, develop the RI and TCK).
- Members
  - Review specs, may participate in Expert Groups, vote in Executive Committee elections.

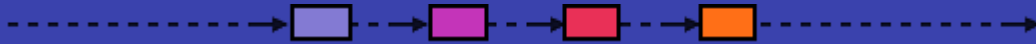
# The Executive Committees



- Two Executive Committees:
  - One for Java ME and one for Java SE and Java EE combined.
- Each EC has 16 members.
- Oracle has a permanent seat on each EC.
- 10 of the other 15 seats are *ratified* by Oracle.
  - Oracle nominates a candidate; the entire JCP membership approves via ballot.
- The remaining 5 seats are *elected* (any JCP member may nominate themselves.)
- Yearly elections reconfirm or replace one-third of the members.
- ECs meet ~monthly by phone, 3 times a year face-to-face.
- EC meeting minutes are public.
  - See [http://jcp.org/en/resources/EC\\_summaries](http://jcp.org/en/resources/EC_summaries).

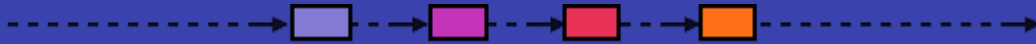


# Executive Committee responsibilities



- Review and vote on all JSRs associated with their EC.
- Evolve the JSPA and the Process Document.
  - The JSPA and Process Document are modified through the JSR process itself.
  - The Executive Committees serve as the Expert Group for JSRs that make these changes; the Chair is the Spec Lead.
  - JSR 99 defined the JSPA, JSR 215 defined the Process Doc.
  - Two new JSRs to evolve the JSPA and Process Doc will be filed soon (*JCP.next.*)
- Represent their own interests to the JCP and the JCP to the developer and user community.
- Advise the PMO.

# Current Executive Committee membership



- Java ME EC

- Stefano Andreani, Aplix, AT&T, CableLabs, IBM, Nokia, Oracle, RIM, Samsung, Sean Sheedy, Siemens, SK Telecom, T-Mobile, **Alex Terrazas**, TOTVS, Vodafone.

- Java SE/EE EC

- Credit Suisse, Eclipse, Ericsson, Fujitsu, **Goldman Sachs**, Google, HP, IBM, Intel, **London Java Community**, Werner Keil, Oracle, Red Hat, SAP, **SouJava**, VMware.

- **Elected in the recent *Special Election*.**

# The Spec Lead



- The individual or institutional owner and driver of a JSR.
  - Recruits and organizes the activities of the Expert Group.
  - Responsible for delivering the Spec, RI, and TCK.
- Intellectual Property rights to the technology incorporated in the JSR accrue to the Spec Lead.
  - Subject to obligations incurred under the JSPA.
- The Spec Lead is free to define the terms under which the RI, and TCK will be licensed.
  - Subject to obligations incurred under the JSPA.
- Oracle is the Spec Lead for the three existing Platforms: Java ME, Java SE, and Java EE.

# The Expert Group



- The Expert Group is recruited and led by the Spec Lead.
  - All members of the JCP are eligible to join.
  - Participation by all interested parties is encouraged and desirable.
  - The EG works as a team to define the JSR and to develop the Spec, RI, and TCK.
- The EG is free to define its own working style.
  - When and how often it meets, how it makes decisions...
- Transparency is strongly encouraged.
  - EGs must explain their transparency strategy:
    - Public aliases, public issue list, Wikis, blogs...
  - EGs must respond publicly to comments.

# The membership



- Anyone can join.
- Total membership is approximately 1200.
- 3700 registered users at jcp.org.
- Fees:
  - Java Licensees: free.
  - Individuals: free
  - **Java User Groups: free.**
  - Non-profit organizations: \$2K/year.
  - Commercial organizations: \$5K/year.

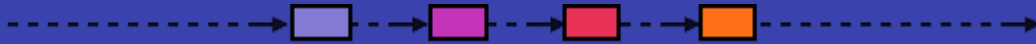


# Who are the members?

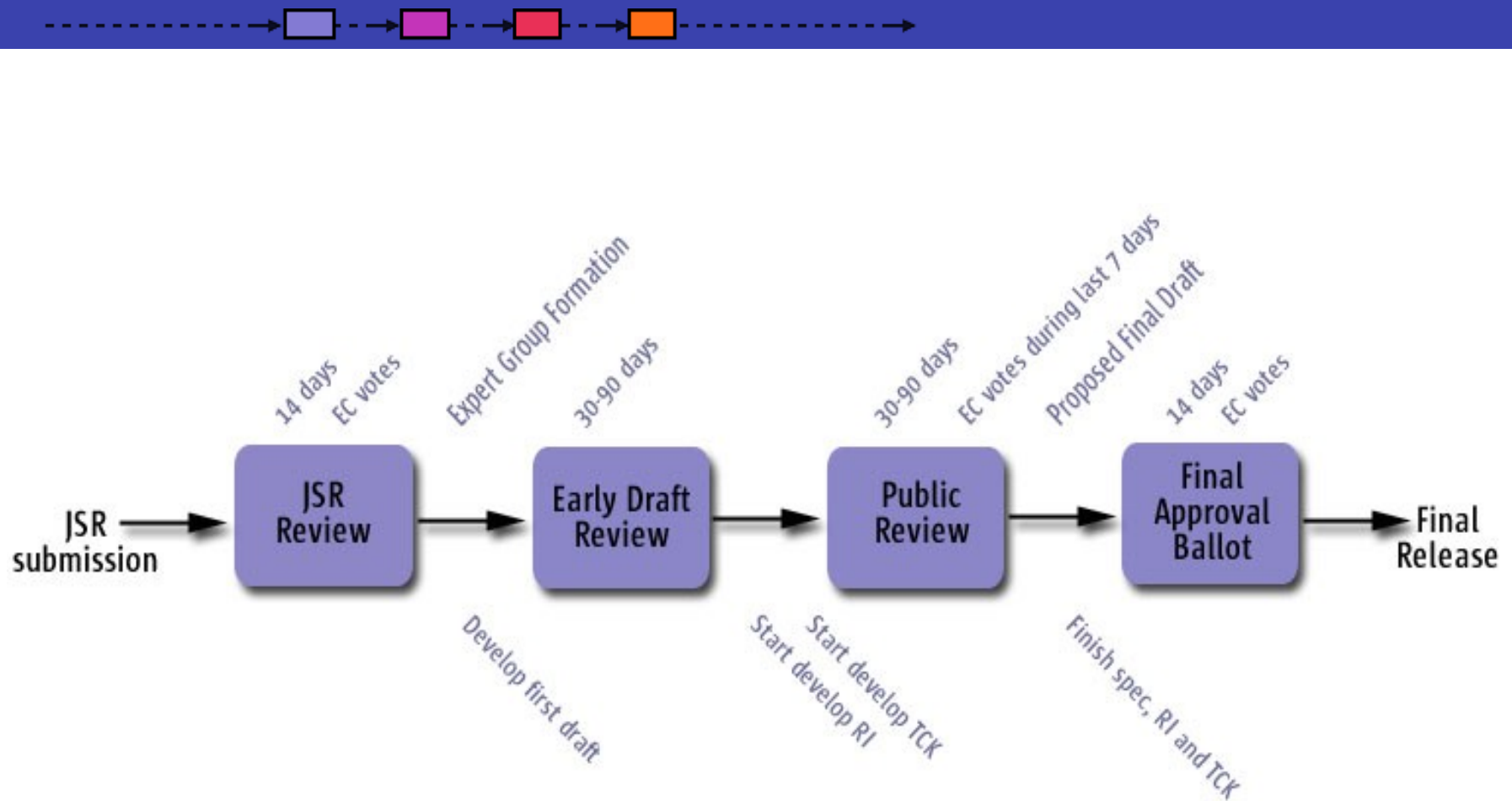


- Membership distribution by type:
  - 77% individual.
  - 21% corporate.
  - 2% non-profit.
- Membership distribution by location:
  - 50% North America
  - 32% Europe and the Russian Federation
  - 13% Asia and the Middle East
  - 5% South America

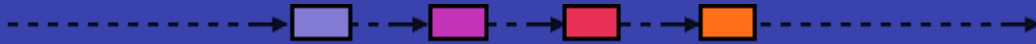
# A typical individual member?



# The JSR development cycle

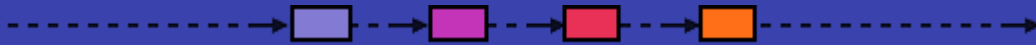


# JSR Submission



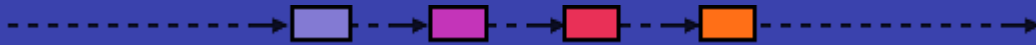
- Identify the submitters, the Specification Lead(s), and the initial members of the Expert Group.
- Describe the proposed specification and the reasons for developing it.
- Identify the target Platform(s).
- Estimate the development schedule.
- Describe the working model the Expert Group will adopt, and how it will involve the community and the public.
- Identify preexisting documents, technology descriptions, or implementations that might be used as a starting point.
- Publish the licensing terms for the Spec, RI, and TCK.

# JSR Approval Ballot



- JSR proposals are published on the JCP website.
- JCP members, the Executive Committees, and the public review and comment.
- JCP members may request to join the Expert Group during this period.
- The Executive Committee(s) vote on the JSR during the final two weeks of the review period.
- If the JSR is voted down, submitters have 14 days to revise and resubmit for a second vote; if this fails the JSR is closed.

# Expert Group formation



- Expert Group formation begins when the JSR is approved.
- Members request to join the EG through an online form.
- No size limit; Spec Leads should ensure that all interested parties are represented, but should keep the group small enough that it will be able to function efficiently.
- Members may be added at any time, subject to the agreement of the existing membership.
- EG decides its mode of operation (communication mechanisms, meeting schedules, etc.)
  - Transparency and community involvement are strongly encouraged.



# Early Draft



- The Expert Group's first deliverable is the *Early Draft*.
  - Provides the JCP membership and the public with a draft that is detailed enough to generate useful feedback.
- No fixed deadline for generating the draft – EGs should take as long as they need (but no longer!)
- Early Draft is published for review on the JCP website.
  - Review period is typically 30 days but may be longer.
- No ballot at this stage – the purpose is to gather feedback.
- EGs may choose to revise the draft and resubmit if feedback indicates that significant changes need to be made.
  - OK to iterate through several Early Draft reviews.

# Public Review



- Spec should be relatively complete before *Public Review*.
- Expert Group should also be developing the RI and TCK while working on the spec.
- Spec is published for review on the JCP website.
  - Review period is 30–90 days (the EG decides how long).
- All public comments should be considered and addressed.
- The Public Draft Specification Approval Ballot takes place during the final 7 days of the review
- If the ballot fails, the EG has 30 days to resubmit for a *Reconsideration Ballot*.
  - If this ballot fails, the JSR is closed.

# Proposed Final Draft



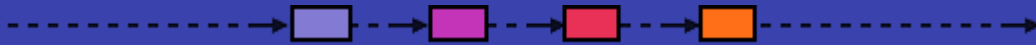
- The EG submits a Proposed Final Draft of the spec to the PMO.
  - This should incorporate and address feedback from the *Public Review*.
- Spec is posted on the website for public download.

# Final Approval and Release



- The EG prepares the Final Draft of the spec and completes the RI and TCK.
  - The TCK must meet quality and coverage goals.
  - The RI must pass the TCK.
  - A test appeals process must be defined.
  - Final RI and TCK licensing terms must be published.
- The EC has two weeks to review these materials and to cast their votes in the Final Approval Ballot.
- If the ballot fails the EG has 30 days to resubmit for a Reconsideration Ballot; if that fails, the JSR is closed.
- Approved JSRs are posted for Final Release and may then be implemented commercially.

# Maintenance



- Spec Leads are expected to make a long-term commitment to revise and update the spec, RI, and TCK.
- Spec Lead typically takes on the role of *Maintenance Lead*.
  - Gathers *Proposed* changes, deciding which to *Accept* and which to *Defer*, publishing these on the JCP website.
- 30-day public *Maintenance Review* period (no ballot unless EC members intervene to request items be deferred).
- RI and TCK must be synchronized with spec changes.
  - *Maintenance Release* is final when this is completed.
- More significant changes (beyond minor clarifications of the spec) require a new JSR.

# Summary of JSR Stages

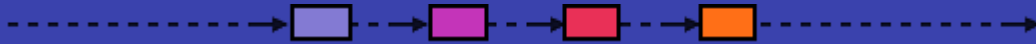


- JAB: JSR Approval Ballot - Mandatory - 2 weeks.
- EDR: Early Draft Review - Mandatory - 30/45/60/90 days.
- PR: Public Review - Mandatory - 30/45/60/90 days.
- PRB: Public Review Ballot – Mandatory - 7 days.
- PFD: Proposed Final Draft - Mandatory - no time frame.
- FAB: Final Approval Ballot - Mandatory - 2 weeks.
- FR: Final Release - Mandatory.
- MR: Maintenance Review - Optional - 30/45/60/90 days.
- MREL: Maintenance Release - Optional.

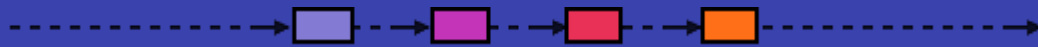
*Each stage must be completed before the Expert Group moves on to the next.*



# Open Source

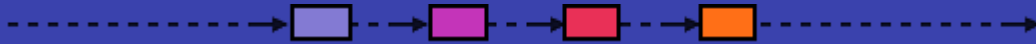


# Open Source processes



- Approximately half of all currently-active JSRs are developed as open source projects.
  - Java SE: OpenJDK.
    - <http://openjdk.java.net/>
  - Java EE: Project Glassfish.
    - <http://glassfish.java.net/>
- Most Expert Groups have adopted some aspects of the open-source development process.

# Transparency



# Participation





# Teamwork

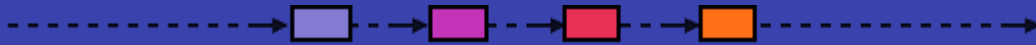


# Agility



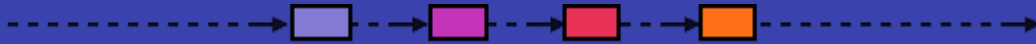


# Hmmm...

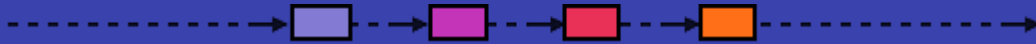


- **L**inux
  - POSIX (IEEE 1003, ISO/IEC 9945)
  - Single UNIX Specification (SUS)
  - Linux Standard Base
- **A**pache
  - HTTP, HTML, XHTML, authentication
  - [http://httpd.apache.org/docs/2.0/misc/relevant\\_standards.html](http://httpd.apache.org/docs/2.0/misc/relevant_standards.html)
- **M**ySQL
  - ANSI/ISO SQL
  - <http://dev.mysql.com/doc/refman/5.0/en/compatibility.html>
- **P**HP
  - ??? (but see Fortran, COBOL, C, C++. Java, C#...)
  - And don't forget Ruby.

# Open source *and* open standards



# The latest news



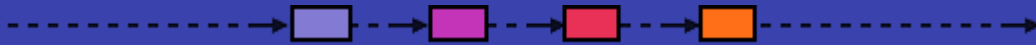
# Special Election – completed May 9



- New EC members took office May 10:
  - On the SE/EE EC
    - SouJava (JUG)
    - Goldman Sachs.
    - London Java Community (JUG)
  - On the ME EC
    - Alex Terazzas.



# Platform updates



- Java SE 7 and Java SE 8 JSRs launched in late 2010.
  - JSR 336: Java SE 7 Release Contents.
  - JSR 337: Java SE 8 Release Contents.
  - Plus many component JSRs.
- Java EE 7 JSRs launched in early 2011.
  - JSR 342: Java EE 7 Specification.
  - Plus many component JSRs.
- Watch for Java ME JSRs coming soon.

# Java SE updates



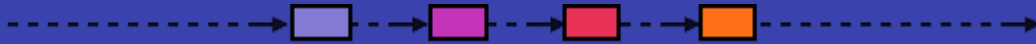
- Java SE 7 - 2011.
  - JSR 203: More New I/O APIs
  - JSR 292: “InvokeDynamic.”
  - JSR 334: Small Language Changes (“Project Coin.”)
  - Worldwide release announcement on July 7.
    - Live from Redwood Shores, Sao Paulo, London.
    - More than 200 Java User Group events.
- Java SE 8 - 2012.
  - Enhanced annotations.
  - Improved parallelization in Concurrency and Collections.
  - Lambda expressions (“Closures.”)
  - Modularity.



# Java EE update



- Java EE 7: *Cloud* support – 2012.
  - Multitenancy support, application versioning, service metadata.
  - Modularity metadata compatible with Java SE 8.
    - Full modularity must come after SE 8.
  - Concurrency utilities (JSR-236.)
  - Revive and complete JCache (JSR-107.)
  - Updates to many component JSRs.
    - JMS 2.0, JAX-RS 2.0, JPA 2.1, JSF 2.2...
  - Web sockets, HTML 5, JSON.

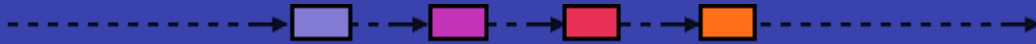


# Using the Process to change the Process



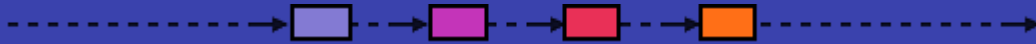
- We modify the Process (as defined in the *Process Document* and the *JSPA*) by filing JSRs.
  - The Chair is the Spec Lead, and the Executive Committee members form the Expert Group.
- *JSR 348: Towards a new version of the Java Community Process* is in progress now.
  - This JSR is focusing on relatively simple changes that can be implemented within about six months.
- Follow-on JSRs will merge the two ECs into one, and implement more complex changes, including any that require modifying the JSPA.

# Transparent operations



- As JSR 348 itself will mandate, all our work is being done in public.
- A [public java.net project](#) has been created with a Wiki, *Expert Group* and *Observer* aliases, discussion forum, issue tracker, and file download area.
- All EG mail traffic is copied to the *Observers* alias.
- All our documents (meeting agendas and minutes, task lists, working drafts) are published in our [Document Archive](#).
- We want your input!

# Themes



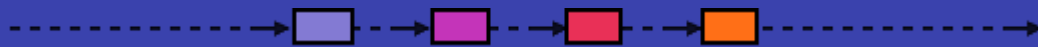
- Transparency
- Participation
- Agility
- Restructuring and cleanup

# Expert Group transparency



- Must do all substantive business on a public mailing list.
- Must track issues in a public issue tracker.
- Must respond to all comments before moving to next stage.
- Must specify collaboration software used and report its Terms of Use.

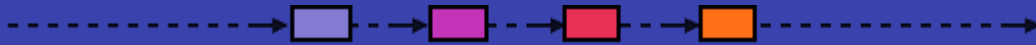
# Executive Committee transparency



- Must hold semi-annual teleconferences and an annual open meeting at JavaOne.
  - All JCP members are free to attend these meetings.
  - Agenda will be chosen from topics suggested by members.
- Must create a public alias with archive for members to provide feedback to the ECs.
- Private and non-normative EC policies and procedures made public and normative in new EC Standing Rules.
- Undocumented license review process now specified.
- Escalation and Appeal process defined.
  - Spec Leads, EG members and JCP members can appeal to EC for help in resolving disputes.

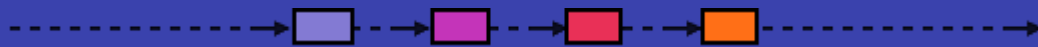


# License transparency



- NOTE: public disclosure of complete licensing terms is already required.
- Changes in license terms between releases must be explicitly called out.
- Previously-offered licenses cannot be withdrawn during the lifetime of a JSR (though new terms may also be offered.)
  - Implementors required to adopt a new version of the TCK must be offered the old terms if they wish.

# TCK transparency



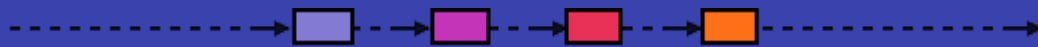
- Spec Leads must submit to the PMO (quarterly, and at every Maintenance Release) a list of all devices/platforms that have been certified as compatible.
  - These will be published on jcp.org.
- TCK documentation must be publicly & freely available.
- TCK User's Guide must include Compatibility Requirements.
- Implementors must be free to discuss detailed TCK test results.

# Election transparency



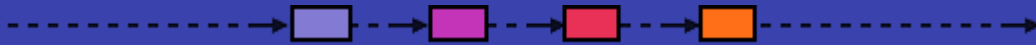
- PMO to host “Meet the Candidates” teleconference(s) before the election. All Members are free to join.
- If a suitable venue (e.g. JavaOne) is available, the PMO should host a “Meet the Candidates” public meeting.
- Employees of a Member Company cannot run for election in their own right.
- Employees of a Member Company cannot vote in their own right.

# Executive Committee transparency



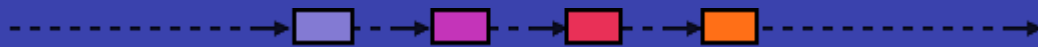
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- Private and non-normative EC policies and procedures made public and normative in new EC Standing Rules.
- Undocumented license review process now specified.
- Escalation and Appeal process defined.
  - Spec Leads, EG members and JCP members can appeal to EC for help in resolving disputes.

# License transparency



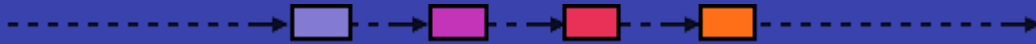
- NOTE: public disclosure of complete licensing terms is already required.
- Changes in license terms between releases must be explicitly called out.
- Previously-offered licenses cannot be withdrawn (though new terms may also be offered.)
  - Implementors required to adopt a new version of the TCK must be offered the old terms if they wish.

# TCK transparency



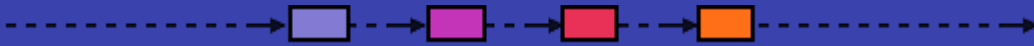
- Spec Leads must submit to the PMO (quarterly, and at every Maintenance Release) a list of all devices/platforms that have been certified as compatible.
  - These will be published on jcp.org.
- TCK documentation must be publicly & freely available.
- TCK User's Guide must include Compatibility Requirements.
- Implementors must be free to discuss detailed TCK test results.

# Participation



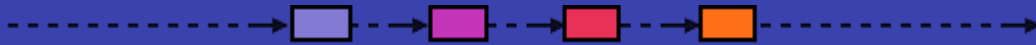
- Requests to join EGs, the Spec Lead's responses, and decisions to remove or replace EG members, must be reported on the EG's public alias.
- Any 3 EG members can request the Spec Lead to remove a disruptive, uncooperative, or unresponsive EG member.
- Any 3 EG members can request the EC to replace an uncooperative or unresponsive Spec Lead.
- EC members who miss two consecutive meetings lose their voting privileges until they have attended two.
- EC members who miss 6 (5?) meetings in a row lose their seat.





- Time-outs for inactive JSRs.
  - Must reach Early Draft within 1 year, Public Draft within 2 years, Final Release within 3 years else can be withdrawn by EC vote.
    - We may tighten up these requirements.
- Clarify the Final Release and Maintenance processes to ensure that completed/updated Spec, RI, and TCK are posted promptly.
- Ensure that links to RI and TCK are maintained.
  - If broken and not fixed, JSR must revert to “incomplete” stage.

# Restructuring and cleanup



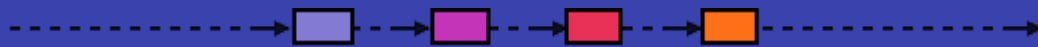
- Private and non-normative EC policies and procedures made public and normative in new EC Standing Rules.
- Some material moved from the Process Document into this.
  - Standing Rules can be changed with a more lightweight process than a JSR.
    - Publish a Final Draft, conduct a 30-day review, then hold an EC vote.
- Process Document definitions consolidated at front of document.
- New *General Requirements* section created for material that is not specific to a particular phase of the process.
  - This permitted some additional refactoring.

# Current status and next steps



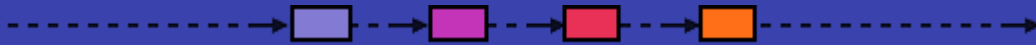
- We're in good shape for Early Draft Review (scheduled to begin July 13.)
  - Very few issues still under discussion.
  - Much polishing, word-smithing, editing still required.
- Need to obtain broader community feedback.
  - That's what EDR is for!
- Start planning for follow-on JSRs after EDR.
- When the JSR completes, Oracle will lead by example and adopt the new Process for all in-flight JSRs.
  - We cannot impose this – only *strongly encourage*.

# Call to action



- Download the EDR documents from <http://java.net/projects/jsr348/pages/WorkingDocuments>
  - The “clean” version of the Process Document.
  - The “clean” version of the EC Standing Rules.
- Join the Observer alias or browse the archives here: <http://java.net/projects/jsr348/lists>
- Provide feedback to the Observer alias: [observers@jsr348.java.net](mailto:observers@jsr348.java.net).

# Get involved



# Why participate?



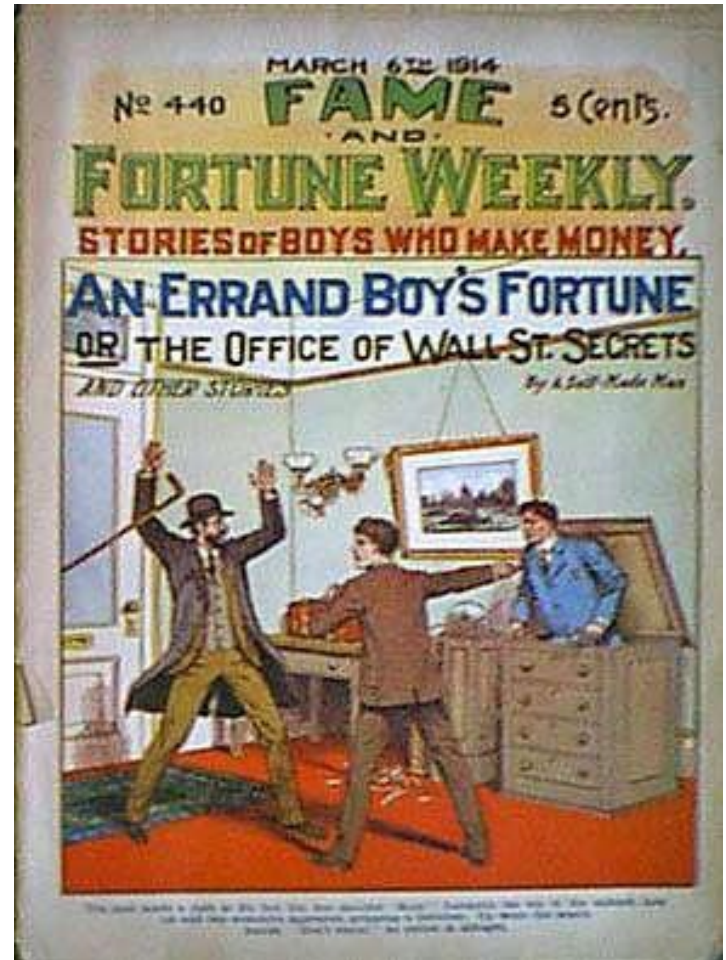
- As an individual or through a Java User Group:
  - Good Karma!
  - Experience.
  - Fame and fortune.
- As a corporation:
  - To influence the technologies that drive your market.
  - Because it's cheaper than developing everything yourself.
  - To provide opportunities for your developers.
  - To increase the size of your market.
  - To gain a competitive advantage (ship new products faster.)



# How to participate



- As a non-member:
  - Participate in OpenJDK or Project Glassfish.
  - Review specifications and provide feedback.
- As a member:
  - Vote in the elections.
  - Join an Expert Group.
  - Lead a JSR.
  - Run for the Executive Committee.
- You can gain membership privileges through your JUG.





# JUG members



- 
- Connecticut JUG
  - Detroit JUG
  - Houston JUG
  - Japan JUG
  - Rio JUG
  - Utah JUG
  - Oklahoma City JUG
  - Central Ohio Java Users Group
  - Duchess (Women)
  - Breizh JUG (Brittany)
  - Java Student UG (Vienna)
  - Japan JUG
  - Riviera JUG (France)
  - SouJava (Brazil)
  - IndiJUG (India)
  - BeJUG (Belgium)
  - JUG-AFRICA
  - JUG-EG (Egypt)
  - JUG-MK (Macedonia)
  - JUG-RU (Russia)
  - JUG-USA
  - Malaysia-JUG
  - London Java Community
  - JUG Chennai (India)

# Java and the JCP: providing solutions for everyone



# Questions?





# Thank you!

