

eHealth Framework - Introduction

<Audience>

<Presenter> / <Date>

Agenda

- Positioning within the ICW Products and Brands
- Metaphors & Vision
- What is the eHealth Framework?
- Health Care Standards
- Technical View
- ICW Partner Guides
- Outlook

Positioning within the ICW Products and Brands

A Comprehensive Suite of Products and Solutions

eHealth Infrastructure: ICW's technology for the deployment of the eHealth Applications

eHealth Framework: ICW's open source underlying technology and development environment



Professional Exchange Server (PXS): provides role based access to aggregated patient data using relevant clinical views. Includes an EMPI, CDR, Record Locator Service and Integration Engine.

Electronic Patient Record (EPR): ICW's portal for clinical staff members, delivering a consolidated patient record using data from our Clinical Data Repository (CDR) and other data repositories using our Record Locator Services.

Care & Disease Manager: fully interoperable rules & workflow engine allowing care managers to define and manage patient care at both the population & individual level.



LifeSensor: A networked personal health record allowing users to store, manage and view their medical history.



ICW eHealth Framework Metaphors

- The ICW eHealth Framework (eHF) is the response to the latest industry challenges and trends.
 - Standards, Technologies, Methodologies
- The ICW eHealth Framework is an optimized infrastructure for the development, hosting and maintenance of Applications and Solutions in eHealth.
- The ICW eHealth Framework offers you a kick-start advantage for the development of health care solutions in an environment with high demands.
 - Security, Data Protection, Legal Restrictions, Customization, Software Life Cycle, Information Life Cycle

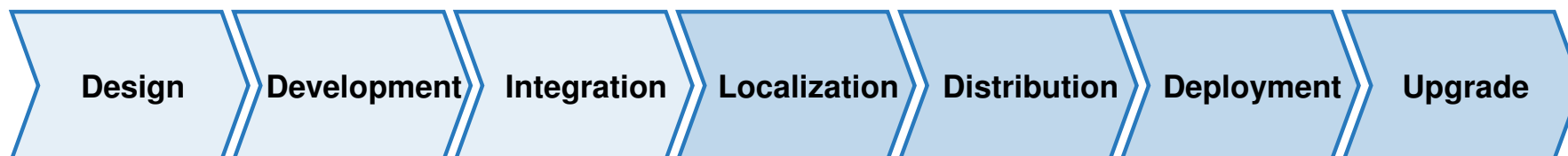
ICW eHealth Framework Vision

- Provide de facto standard for developing eHealth Software internally and externally.
- Establish and grow out an ecosystem based on eHF with Partners from Standard Organisations, Industry, Education and Research.
- The eHealth Framework is the leading platform for developing secure and robust eHealth Solutions by supporting open standards, increasing developer productivity and providing semantically interoperable components and services.

What is the eHealth Framework?

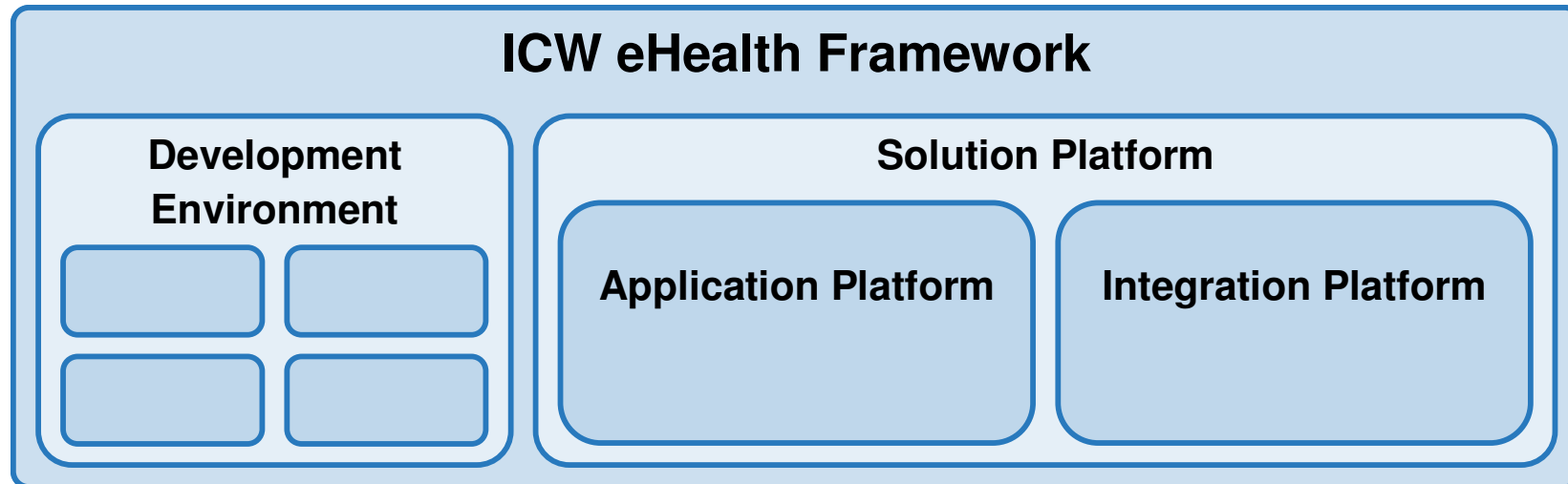
A Holistic Approach

- The eHealth Framework is a holistic infrastructure covering the entire **Development, Software and Information Life Cycle**

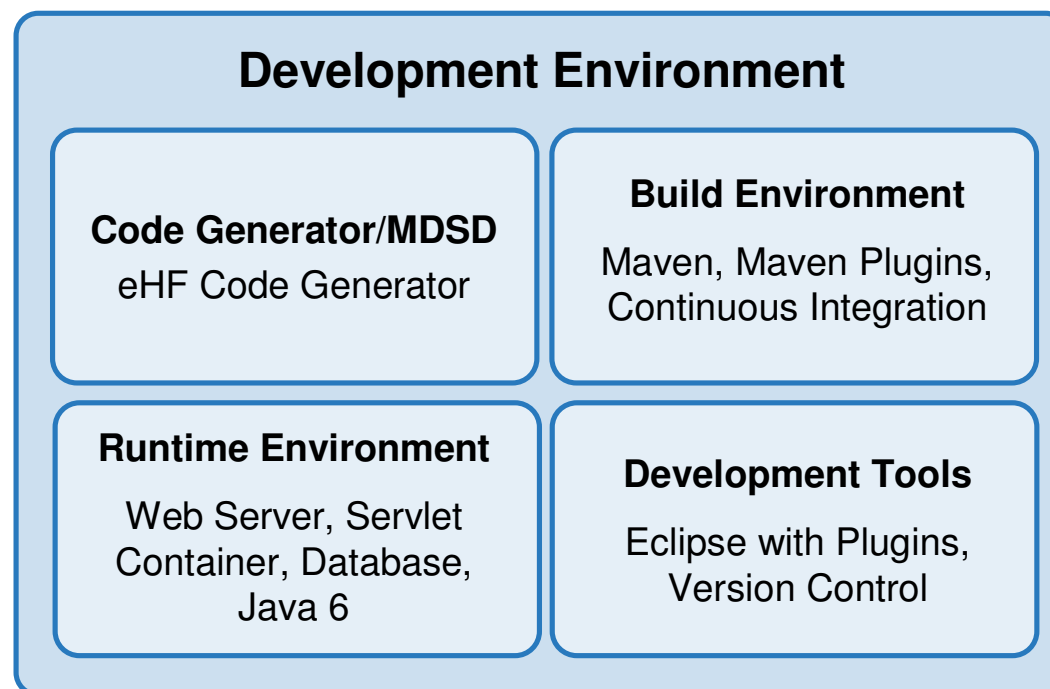


What is the eHealth Framework?

Overview

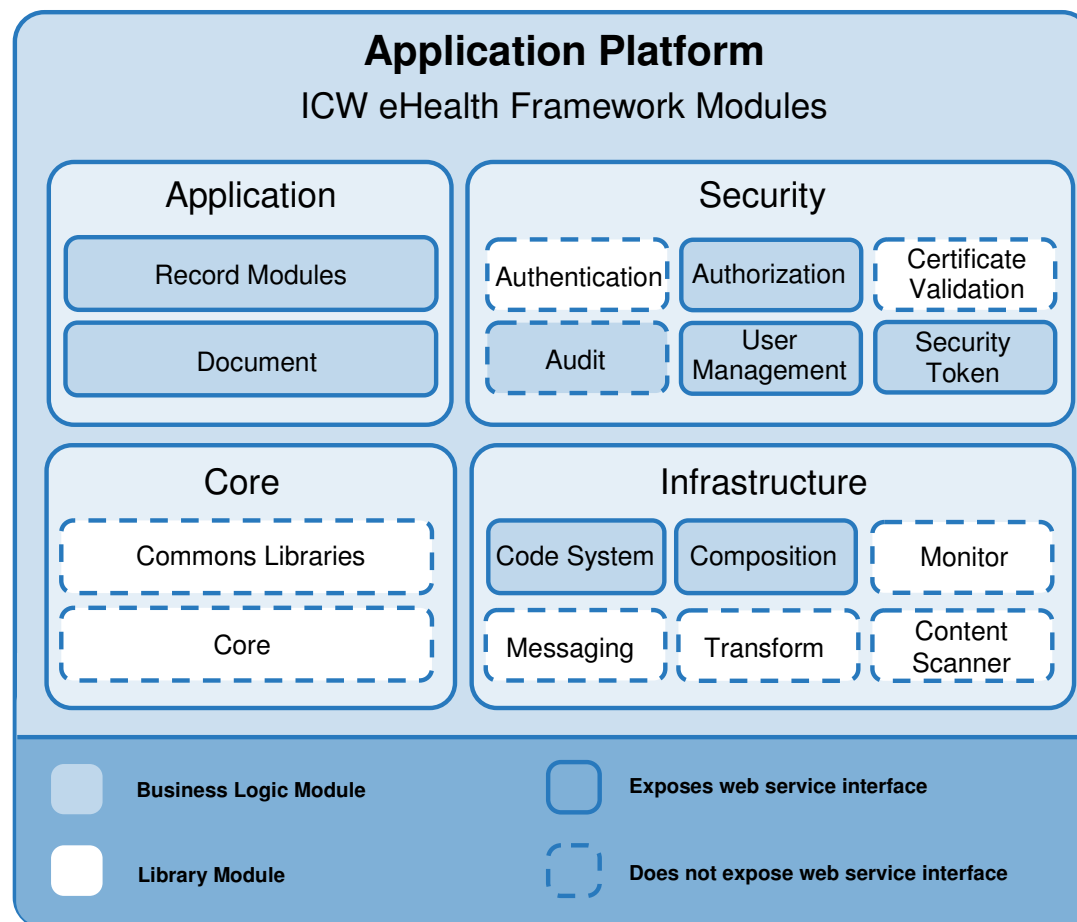


What is the eHealth Framework? Development Environment



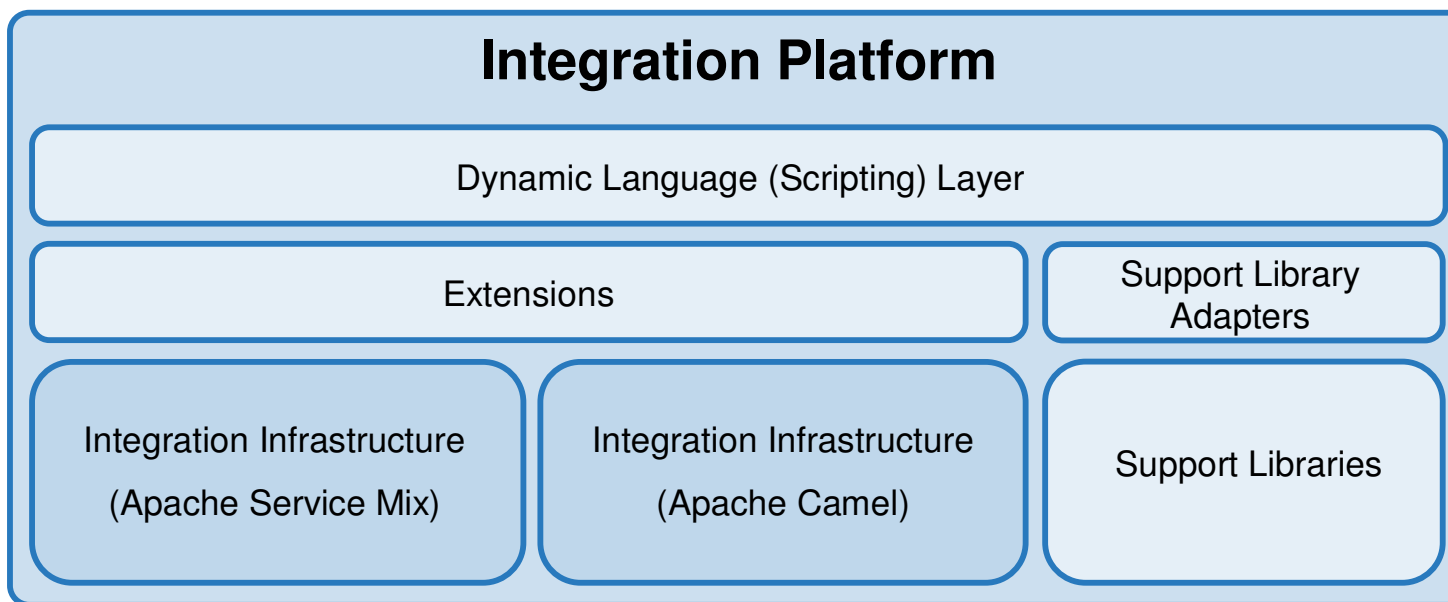
What is the eHealth Framework ?

Application Platform



What is the eHealth Framework ?

Integration Platform



What is the eHealth Framework ?

Primary Objectives

- Application Security
- Data Security
- Information Life Cycle
- Extensibility & Integration
- Modularity
- Layered Architecture
- Separation of Concerns
- Backward Compatibility
- Scalability & High Availability
- Testability
- Portability
- Standards
- Standard Technology
- Serviceability
- Maintainability

What is the eHealth Framework ?

A Collection of Concepts

- Component, Module, Application, Solution Meta Model
- Assembly
- Domain-Driven Design Concepts
 - Domain Model-Centric Approach
 - Focus on Domain Model and Logic not on technology
- Model-Driven Software Development
- Customization / Localization

What is the eHealth Framework ?

A Collection of Concepts

- Deployment
- Application Life Cycle Support
 - Database Upgrade
 - Backward Compatibility
 - Code Set Versioning
 - Permission Profile Versioning
- Integration Patterns
- Continuous Integration & Continuous Quality Assurance

What is the eHealth Framework ?

Documentation

- The eHealth Framework is Documentation
 - Technical White Paper
 - Reference Documentation
 - Concept Papers, Guidelines and Conventions, Recommendations
 - Training Material
 - How To's, Best Practices
 - Tutorial
 - ICW Developer Conference Material

What is the eHealth Framework?

A Community

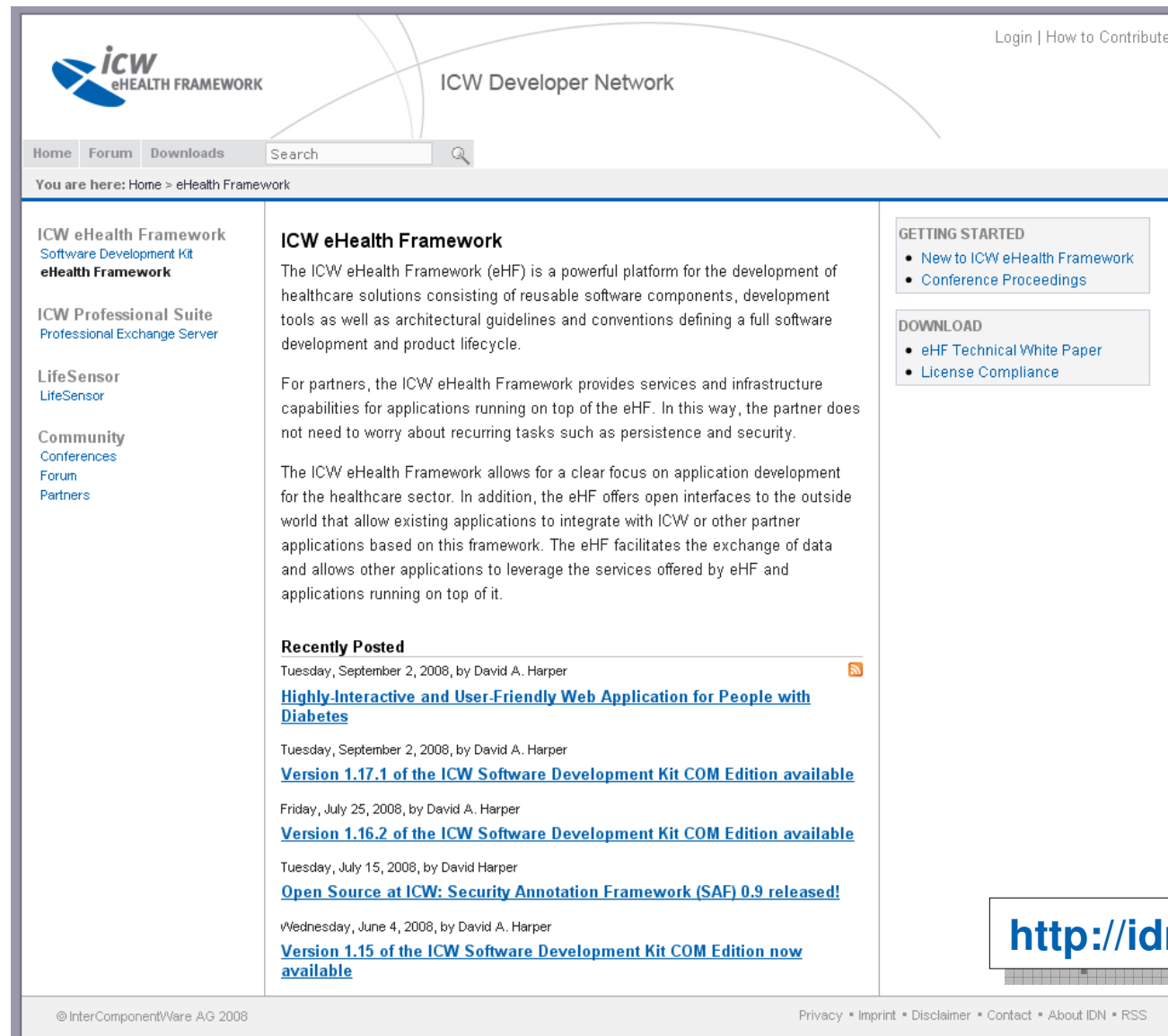
- Open Internal Development
 - Committer Status for selected individuals in ICW
- Exchange and Collaboration via the ICW Developer Network
- Open Source Initiative
 - Open Source eHF to the Open eHealth Foundation (in progress)
 - Partnership with Foundation Members
- ICW Partner Program

What is the eHealth Framework?

Technology Platform and Support

- The eHealth Framework is a Solution Platform for ICW and Partners
 - Internal: E.g. LifeSensor, LCSA Cockpit, DFB Project
 - Students, Education, Research
 - Industry → ICW Partner Program, eHF Partner Guide
- The eHealth Framework is Support
 - Support Team
 - Product Management
 - Quality Management
 - Development Team

Exchange & Collaboration – ICW Developer Network



The screenshot shows the ICW Developer Network website. At the top left is the ICW eHEALTH FRAMEWORK logo. To the right is the text "ICW Developer Network" and "Login | How to Contribute". Below the logo is a navigation menu with "Home", "Forum", and "Downloads", followed by a search box. A breadcrumb trail reads "You are here: Home > eHealth Framework".

The main content area is divided into three columns. The left column contains links to "ICW eHealth Framework Software Development Kit eHealth Framework", "ICW Professional Suite Professional Exchange Server", "LifeSensor LifeSensor", and "Community Conferences Forum Partners".


The middle column features the "ICW eHealth Framework" section with a description: "The ICW eHealth Framework (eHF) is a powerful platform for the development of healthcare solutions consisting of reusable software components, development tools as well as architectural guidelines and conventions defining a full software development and product lifecycle." It also includes a paragraph about services and infrastructure for partners, and another paragraph about application development focus.

The right column has two sections: "GETTING STARTED" with links for "New to ICW eHealth Framework" and "Conference Proceedings", and "DOWNLOAD" with links for "eHF Technical White Paper" and "License Compliance".

Below the main text is a "Recently Posted" section with five entries, each with a date, author, and a link to a specific article or update.

At the bottom right, a box contains the URL <http://idn.icw-global.com>. The footer includes copyright information "© InterComponentWare AG 2008" and a list of links: "Privacy", "Imprint", "Disclaimer", "Contact", "About IDN", and "RSS".

Proceedings from the past ICW Developer Conferences


ICW Developer Network
Login | How to Contribute

Home
Forum
Downloads

You are here: Home > Conferences > ICW Developer Conference - May 2008 > Conference Proceedings > 02

ICW eHealth Framework
Software Development Kit
eHealth Framework

ICW Professional Suite
Professional Exchange Server

LifeSensor
LifeSensor

Community
Conferences
Forum
Partners

Fundamentals


ICW eHealth Framework Public API - Isolate Yourself - Stay Sane!

Karsten Klein

In this presentation we start with the rationale behind the domain-driven design principles of isolating your domain and anti-corruption layer and extend the concept into the definition of the Public API. We will illustrate how eHF supports the definition of the Public API and how the eHF development environment enforces it.

Agenda

- Introduction
 - Why do we require a Public API?
- Elements of the eHF Public API Concept
 - Code Partitioning / Layered Architecture
 - Java Public API
 - Spring Context Modularization
 - Spring Custom Namespaces
 - Exception and Error Handling
- Outlook



Conference Resources, May 2008

- [Detailed Description](#)
- [Agenda](#)
- [Sessions](#)
- [Location](#)
- [Accommodation](#)
- [Registration](#)
- [Conference Proceedings](#)
- [Survey \(login required\)](#)

GETTING STARTED

- [New to ICW eHealth Framework](#)
- [Conference Proceedings](#)

DOWNLOAD

- [eHF Technical White Paper](#)
- [License Compliance](#)

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Health Care Standards

- HL7 v3 (Health Level 7)

- <http://www.hl7.org>

- “standards for the exchange, management and integration of electronic healthcare information”

- HL7 Reference Information Model based Domain Model and Documents



- IHE (Integrating the Healthcare Enterprise)

- <http://www.ihe.net>, <http://www.ihe-europe.org>, <http://www.connectathon.net>

- “an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information”

- “Systems that support IHE Integration Profiles communicate better, are easier to implement, and enable care providers to use information more effectively.”

- Workflow (Integration Profiles)

- ICW Professional Gate 1.6 (MPI, Consistent Time)

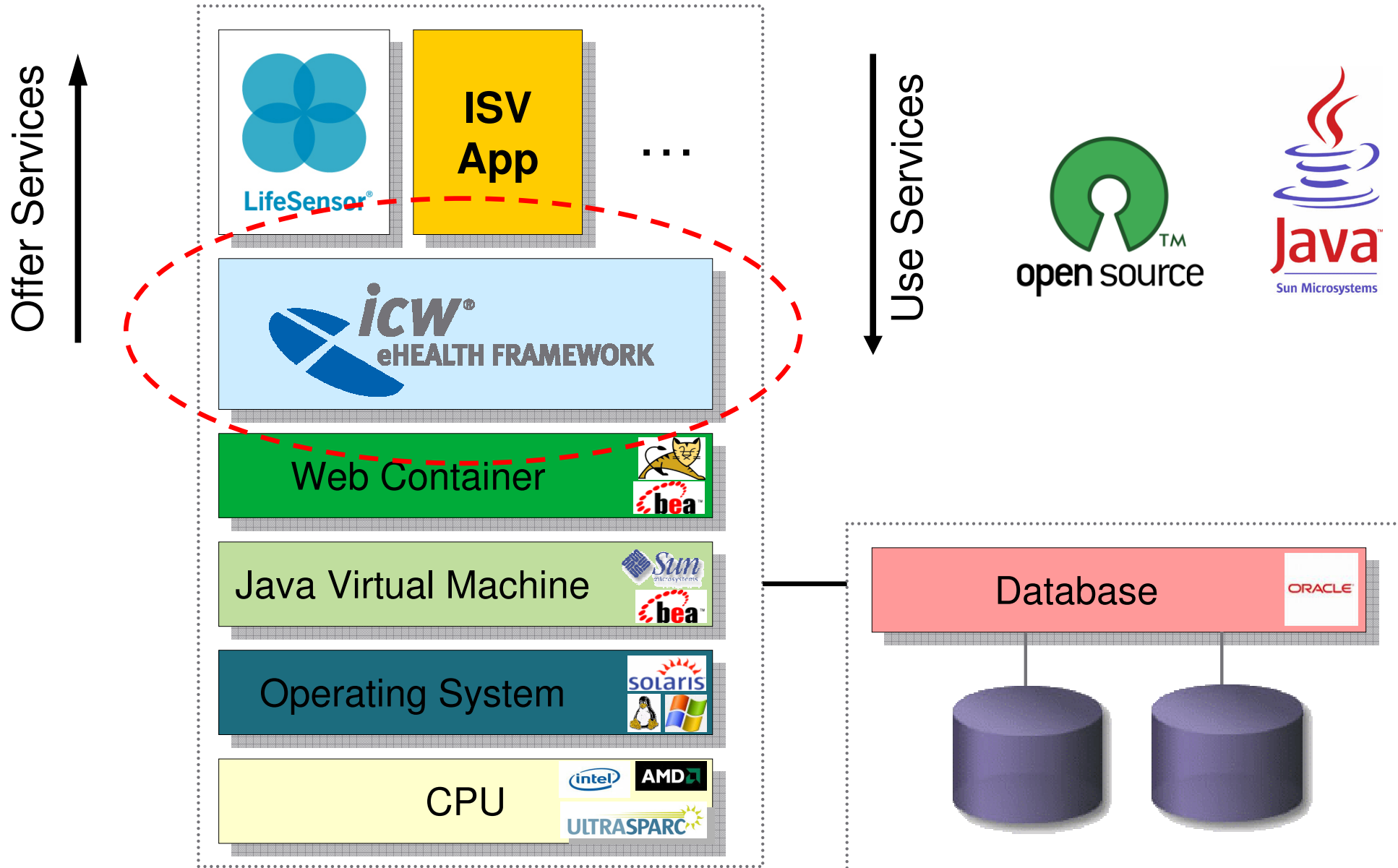


- Codesystems

- ICD (diagnosis), LOINC (observations), UCUM (units), PZN (medications)



High-Level Technical View



Supported Platforms

| # | CPU | OS | 32/64 Bit | Web Container | JVM* |
|---|-----|------------|-----------|---------------|-----------|
| 1 | x86 | SLES 10 | 64 | Tomcat 6.0 | Sun JDK 6 |
| 2 | x86 | Solaris 10 | 64 | Tomcat 6.0 | Sun JDK 6 |
| 3 | x86 | Win2003 | 64 | Tomcat 6.0 | Sun JDK 6 |

* On 64 bit systems we recommend using 32bit JVM due to memory (factor 1.5) and performance reasons.

Supported Oracle Versions

| # | Database | Version | 32/64 Bit |
|---|----------|---------|-----------|
| 1 | Oracle | 10g RAC | 32 |
| 2 | Oracle | 10g RAC | 64 |

Open Source



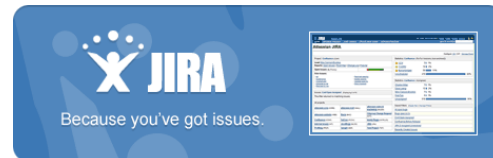
Open eHealth



Code Coverage Analysis



Checkstyle



ICW Partner Guides Concept

An ICW Partner Guide provides all information, resources and services to allow partners to create value-add applications with the ICW platform

- ICW Partner Guides are provided for different areas such as eHF, LifeSensor, or ICW Professional Suite

ICW Partner Guides

Bill of Materials / Services



Outlook

Current Activities

- Focus on eHF Partner Guide
 - Enable and optimize Partner Development
- Simplifying the eHF
 - 7 Steps Tutorial
 - Usability, Tooling
- Continuous revision and extension of concepts
- Consistent promotion of concept realizations

Outlook

Next Steps

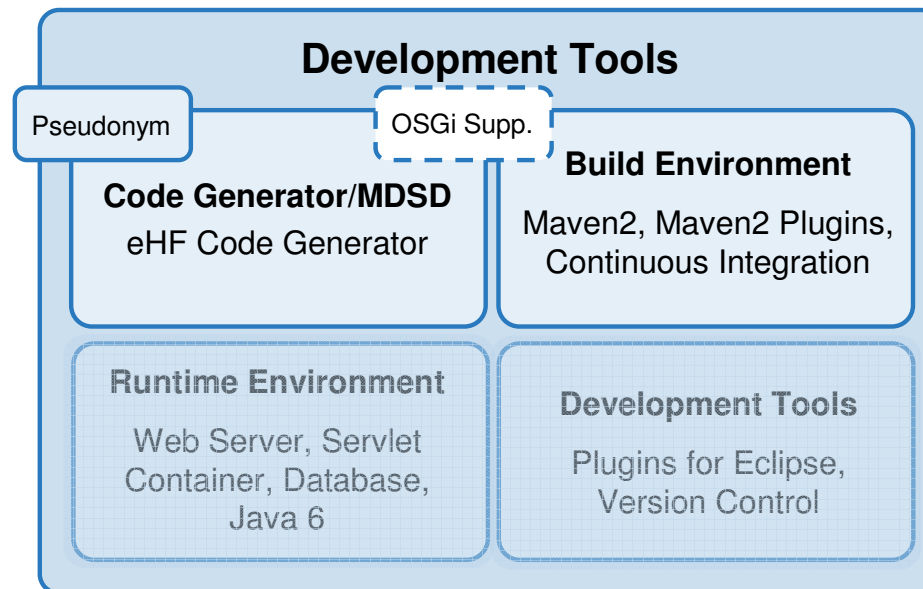
- Future Activities

- Extended IHE Support
- Technology Evolution
 - OSGi, Spring Dynamic Modules
 - Portal Technologies (US Labs)
- Open Sourcing eHF in the Open eHealth Foundation



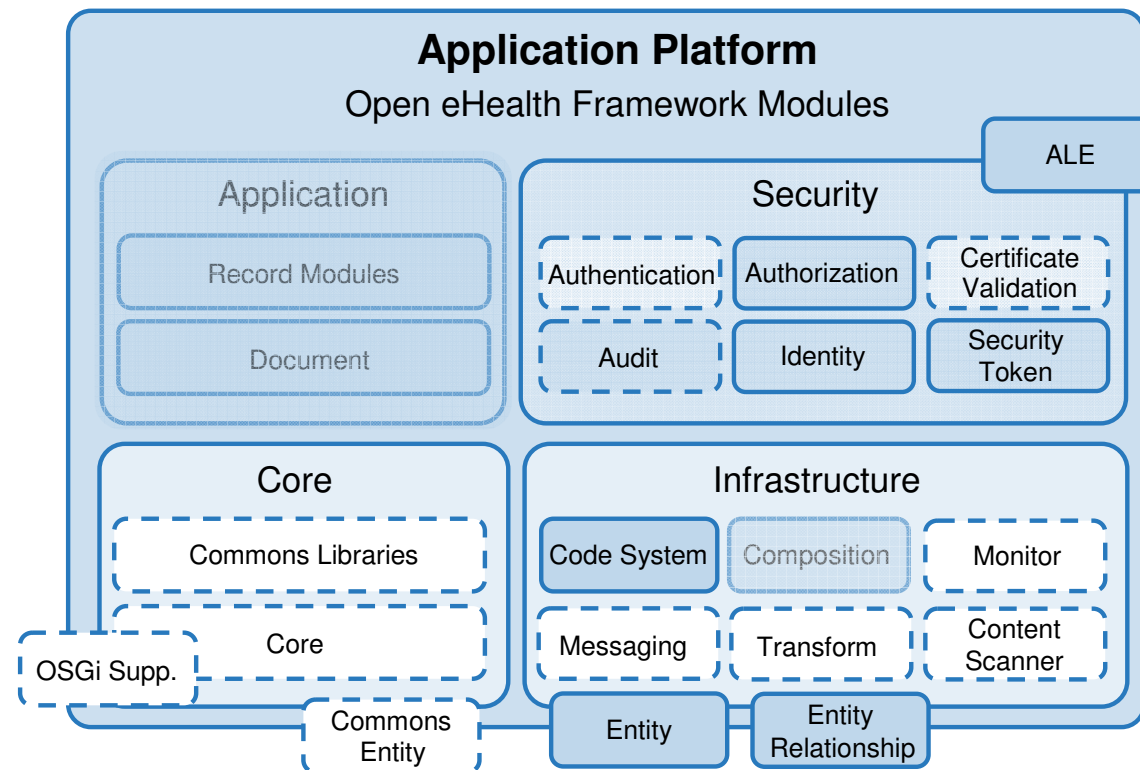
Open eHealth Foundation

eHF Contribution Goals 2009 – Development Tools



Open eHealth Foundation

eHF Contribution Goals 2009 – Application Platform



References & Further Reading

- ICW eHF Documentation
 - Technical Whitepaper
 - Reference
 - Tutorial
- ICW Developer Conferences
 - Proceedings of previous conferences are available online
- ICW Developer Network (IDN)
 - <http://idn.icw-global.com/>
 - Information about ICW eHealth Framework (eHF)
 - Technical Whitepaper
- ICW eHealth Framework Marketing Flyer
 - Available from ICW Corporate Marketing

Thank you for your attention!

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