

Open Source Tools in Medical Informatics: The Eclipse Open Healthcare Framework

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Eclipse, Open Healthcare Framework



Eclipse OHF

- The Eclipse Foundation
 - Open source community whose projects are focused on providing an extensible development platform and application frameworks for building software (www.eclipse.org)
- The Eclipse Open Healthcare Framework (OHF)
 - Project within Eclipse formed for the purpose of expediting healthcare informatics technology
 - Extensible frameworks and tools which emphasize the use of existing and emerging standards in order to encourage interoperable open source infrastructure, thereby lowering integration barriers (www.eclipse.org/ohf)



Eclipse OHF

- Diverse Initial Contributors
 - Mayo Clinic
 - Jiva Medical
 - Inpriva
 - IBM



Eclipse OHF



- Growing a Diverse Community
 - Committers from four companies and four universities
 - Most committers are involved in healthcare specification and standardization bodies
 - User community of close to thirty vendors and universities
 - Mutual help between developers from competing companies
 - Connecting to everyone in many ways
 - Newsgroup, website, wiki, bugzilla, paper publications, joint research efforts, joint standards efforts, presentations, demonstrations, testing events, etc.



Eclipse OHF

- **Diverse Project Components**
 - **HL7**
Health Level 7 v2.x and v3 toolkit
 - **CTS**
HL7 common terminology service built upon LexGrid repositories and technologies
 - **STEM**
Spatiotemporal epidemiological modeler to create models of emerging infectious disease
 - **SODA**
Service oriented device architecture device integration including Device Kit and SAT



Eclipse OHF

- **Diverse Project Components**

- IHE

- Implementations of Integrating the Healthcare Enterprise profiles

- Bridge

- Implementations of IHE profiles for use with a Web services wrapper

- **Integrating the Healthcare Enterprise**

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

OHF IHE/Bridge User Community

(by year 'joined')

2006

- CapMed
- IBM HIE
- NHIN



2007

- Possibility Forge
- PracticePartner
- Bell Canada
- MedCommons
- MedQuist
- Blueware
- Accenture
- Duke University
- Health@Net (Austria)
- Synapsis (Italy)
- MECIDS



2008

(more coming! – awaiting confirmation)





Significant OHF IHE/Bridge Events

- IHE 2007 North American Connectathon (Jan '07)
- US NHIN Phase 1 Demonstration for DHHS (Jan '07)
- HIMSS 2007 Interoperability Showcase (Feb '07)
- Healthcare Day at EclipseCon 2007 (March '07)
- IHE 2007 EU Connectathon (April '07)
- World of Health IT (Oct '07)
- IHE 2008 North American Connectathon (Jan '08)



MECIDS Project Highlight

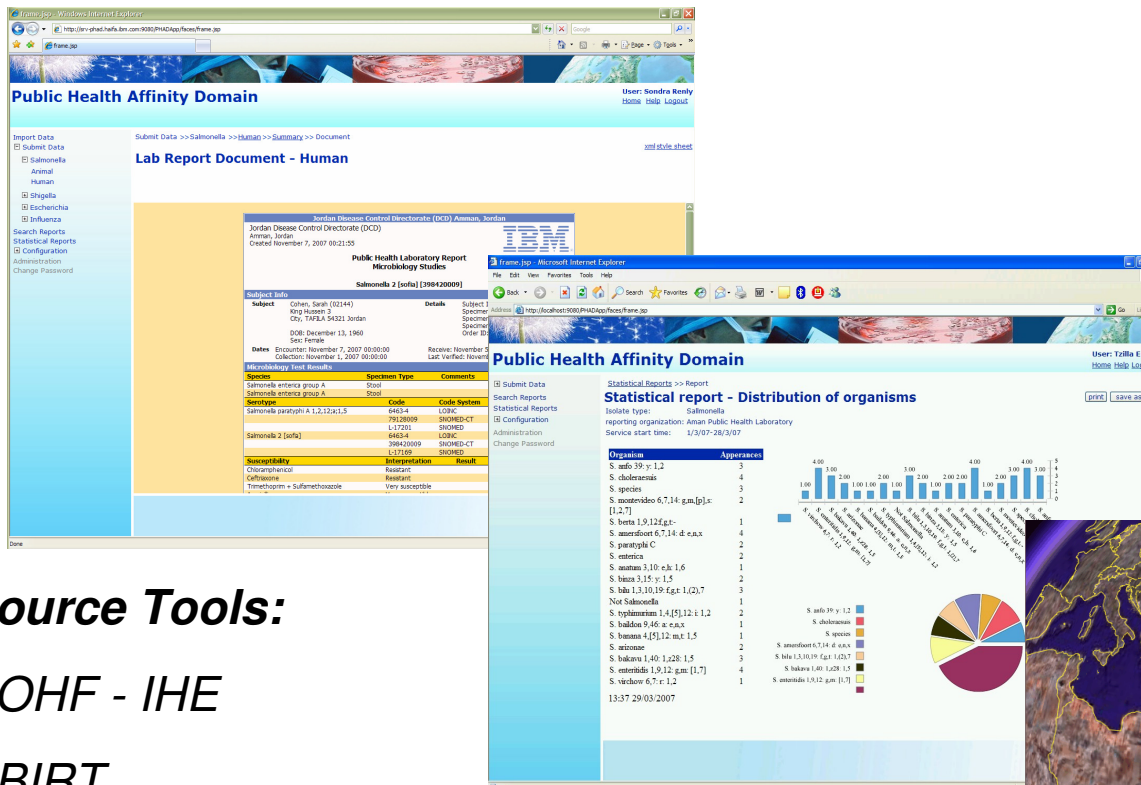
- Middle East Consortium for Infections Disease Surveillance
 - Regional cooperation on disease surveillance
 - Build capacity to deal with disease outbreaks
 - Build relationships to manage cross-border cases

- Adopt OHF

Leverage the same technical infrastructure and interoperability specifications being created and actively adopted worldwide within the clinical domain (IHE), for public health. **The same architecture that serves clinical care can be used to support clinical research, public health and biosurveillance. We have proved this with the MECIDS project.**



MECIDS Project Highlight



The screenshot displays two overlapping windows from the Public Health Affinity Domain web application. The background window shows a 'Lab Report Document - Human' for a patient named Sarah Cohen (02144) from Amman, Jordan. It includes a table of 'Microbiology Test Results' with columns for Specimen, Specimen Type, Code, Code System, and Comments. The foreground window shows a 'Statistical report - Distribution of organisms' with a bar chart and a pie chart. The bar chart shows the number of appearances for various Salmonella strains, with 'S. enteritidis 1,9,12:g:m [1,7]' having the highest count. The pie chart shows the relative distribution of these organisms.

Specimen	Specimen Type	Code	Code System	Comments
Salmonella enterica group A	Stool			
Salmonella enterica group A	Stool			
Salmonella paratyphi A 1,2,12:k:1,5		4463.4	LOINC	
Salmonella 2 [soft]		3994-20009	SHORHD-CT	
Salmonella 2 [soft]		4463.4	LOINC	
Salmonella 2 [soft]		3994-20009	SHORHD-CT	
Salmonella 2 [soft]		4463.4	LOINC	

Organism	Appearances
S. afo 39: y: 1,2	3
S. choleraesuis	4
S. species	3
S. montevideo 6,7,14:g:m [p]x: [1,2,7]	2
S. berta 1,9,12:g:g:-	1
S. anserdort 6,7,14: d:e:a,x	4
S. paratyphi C	2
S. enterica	2
S. anatum 3,10: e:k: 1,6	1
S. bima 3,15: y: 1,5	2
S. bla 1,1,10,19: f:g:t: L(2),7	3
Not Salmonella	1
S. typhimurium 1,4,[5],12: t: 1,2	2
S. balboa 9,4:5: a: e:a,x	1
S. birmora 4,[5],12: m:t: 1,5	1
S. anatum	2
S. bakaev 1,40: 1,228: 1,5	3
S. enteritidis 1,9,12: g:m [1,7]	4
S. varhovi 6,7: e: 1,2	1

Open Source Tools:
 Eclipse OHF - IHE
 Eclipse BIRT
 Eclipse OHF - STEM

Get Involved !

<http://www.eclipse.org/ohf/>