

Health Life Horizon Project



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“Design and Implementation of Open Source HL7
Version 3 Solution for e-Health Services”

Dr. Hafiz Farooq Ahmad (Associate Professor)
NUST School of Electrical Engineering and
Computer Science
farooq.ahmad@seecs.edu.pk

Funding Agency

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<http://www.ictrdf.org.pk> »



Presentation Outline

- Health Life Horizon Project Overview
- HLH Objectives
- Activities and Achievements
- Future Roadmap

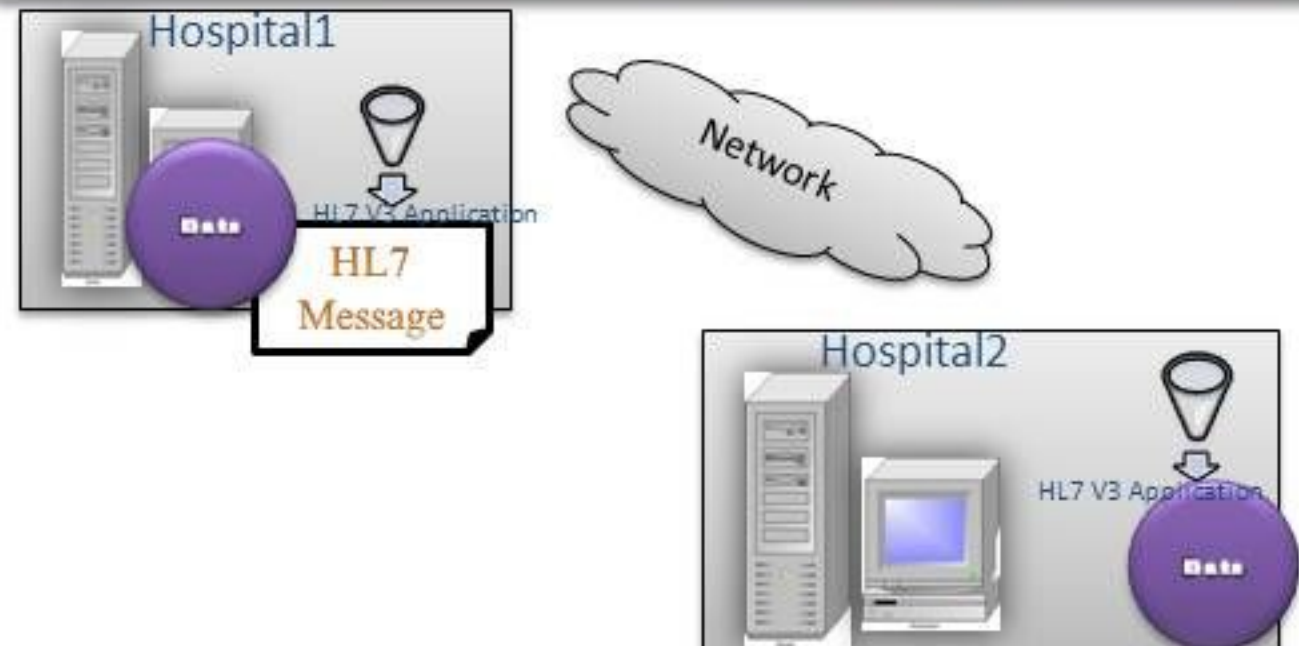
Health Life Horizon Project

Theme

- To promote HL7 standard and provide open source HL7 V3.0 solution to the community.

Objectives

- To make Pakistan HL7 affiliate taking part in standard development and localization.
- To provide cost-effective solution for healthcare interoperability using HL7 v3.0.



Acknowledgement

This project is funded by National ICT R&D Funds Pakistan, (<http://www.ictrdf.org.pk>)

HLH Objectives

Industrial Objective	<ul style="list-style-type: none">• Availability of open source HL7 version 3• Revenue generation from customization
Academic Objective	<ul style="list-style-type: none">• Academia-Industry Collaboration• HL7 Courses and Certification Training
Research Objective	<ul style="list-style-type: none">• Service Orientated HL7• Ontology-based HL7
Human Resource Development Objective	<ul style="list-style-type: none">• IT professionals and researchers training on HL7• Bunch of opportunities for young researchers
Other Objective	<ul style="list-style-type: none">• Produce HL7 experts around the world• HL7 affiliations

HLH Achievements



and



Ongoing Activities

Activities & Achievements (1/2)

- Diffusion of IT in healthcare is generally low in Pakistan
- In order to create awareness about HL7 following activities has been conducted:
 - National & International /cooperation/ visits
 - Workshop has been organized
- Research papers publication.
- Visit to Japan and Pakistan
 - Effective contributions

Activities & Achievements (2/2)

- NUST, SEECS first HL7 organizational member from Pakistan
- NUST-SEECS: all rights and privileges of HL7 organizational membership
- Affiliate Member, Pakistan (in progress)
- 2 MS students completed
- 8 MS in progress
- 2 PhD students

Dr. Burnd (Germany) and
Dr. Hiroki Suguri (Japan) are
willing for Joint PhD Program.



Japan Visit

- 10th International IHIC Conference 2009 (May 8-9)
 - Five Research Papers from HLH Team presented
- 23rd HL7 Working Group Meeting
 - (May 10-14, 2009)
 - Attending of high value tutorial
 - Meeting with HL7 CEO and Chairman.

Visitors

1. Dr. Hafiz Farooq Ahmad
(HLH Project Director)
1. Mr. Maqbool Hussain
(HLH Team Lead)
1. Mr. Muhammad Afzal
(HLH Team Lead)



Research Publication (1/2)

- Maqbool Hussain, Muhammad Afzal, Arshad Ali, Hafiz Farooq Ahmad “**Laboratory Messaging Interoperability using HL7 V 3.0**” , 10th International HL7 Interoperability Conference (IHIC), 8-11 May, 2009, Kyoto, Japan.
- Shagufta Umer, Muhammad Afzal, Maqbool Hussain, Hafiz Farooq Ahmad, Khalid Latif, “**Design and Implementation of an Automation Tool for HL7 RIM-to-Relational Database Mapping**” , 10th International HL7 Interoperability Conference (IHIC), 8-11 May, 2009, Kyoto, Japan.
- Mehtab Alam, Muhammad Afzal, Maqbool Hussain, Hafiz Farooq Ahmad, “**HL7 Laboratory Messaging Through SOA Infrastructure (HLMSI)**” , 10th International HL7 Interoperability Conference (IHIC), 8-11 May, 2009, Kyoto, Japan.
- Somia Razzaq, Maqbool Hussain, Muhammad Afzal, Hafiz Farooq Ahmad, “**Secure Web Service Transportation for HL7 V 3.0 Messages**”, 10th International HL7 Interoperability Conference (IHIC), 8-11 May, 2009, Kyoto, Japan.
- Wajahat Ali Khan, Maqbool Hussain, Muhammad Afzal, Khalid Latif, Hafiz Farooq Ahmad, A.M.Khattak, “**Towards Semantic Process Interoperability**” , 10th International HL7 Interoperability Conference (IHIC), 8-11 May, 2009, Kyoto, Japan.

Research Publications (2/2)

- Muhammad Afzal, Maqbool Hussain, Hafiz Farooq Ahmad and Arshad Ali “**Design and Implementation of Open Source HL7 Version 3 for e-Health Services**”, Proceedings of 9th International HL7 Interoperability Conference (IHIC), 2008, Crete, Greece.
- Maqbool Hussain, Muhammad Afzal, Arshad Ali, Hafiz Farooq Ahmad and Naeem Khalid “**Healthcare Applications Interoperability through Implementation of HL7 Web Service Basic Profile**” 6th ITNG Conference, 2009, USA.
- Naeem Khalid, Maqbool Hussain, Muhammad Afzal, Hafiz Farooq Ahmad “**Digital Health Care Ecosystem: SOA Compliant HL7 based Health Care Information Interchange**“ IEEE DEST 2009, Istanbul, Turkey.
- Muhammad Afzal, Maqbool Hussain, Noor-Ul-Qayyum, Hafiz Farooq Ahmad “**Emerging Role of ICT in Medical Education and Healthcare**”, International ICME Conference, 25-27 Jan, 2008, Islamabad, Pakistan.

Workshop Organized

- **One Day Workshop**

NUST SEECS, Pakistan in collaboration with SETECS Inc USA organized a workshop on: HL7 (Health Level 7) Healthcare Standard and Secure Electronic Medical Record Exchange and Patient Identification Solution on June 11, 2009

- **Speakers**

Dr. Hafiz Farroq Ahmad (NUST SEECS, Pak)

Dr. Arshad Ali (NUST SEECS, Pak)

Mr. Muhammad Afzal (NUST SEECS, Pak)

Mr. Maqbool Hussain (NUST SEECS, Pak)

Dr. Sead Muftic (CEO, SETECS AB, USA)

Mr. Arif Aslam Kundi (Ministry of IT, Pak)

- **Theme**

- Stimulate the importance of HL7 to healthcare community
- Created good awareness of HL7 by highlighting the importance of information and communication systems in healthcare.

System Deployment at CITI Lab, Pakistan

- Successfully deployed initial working system at CITI Lab, Pakistan.
- CITI Lab, Pakistan a renowned clinical laboratory.
- Using mailing service for collecting tests orders and specimens and phone call for dictating tests results .
- Developed system helped them in sending and receiving the test reports in an efficient and cost effective manner .
- Globalizing the Pakistan healthcare industry .
- CITI Lab can be connected to other hospitals, laboratories thus inter-linking healthcare industry.



First HL7 Corporate Meeting

“A Roadmap of Interoperable Healthcare Information Systems for Pakistan” on 10th July 2009

- **Theme:**

- To promote HLH efforts nationally and internationally through affiliation of Pakistan to HL7.
- Bring together various stakeholders (researchers, medical professionals, IT specialists and policy makers).
- Design nation-wide policy for e-Health services such as national Electronic Health Record (EHR).

Purpose of Meeting

- **Action items/points:**
 - HL7 Pakistan Domain Registration.
 - Sharing Affiliation Process of Pakistan to HL7 with different stakeholders.
 - Report on EHR (Electronic Health Record) Systems and open standards.



Second Corporate Meeting

- **Theme and Objective:**

- Five willing and enthusiastic signatories for affiliation process
- Share with audience about Pakistan HL7 affiliation process i.e.; how Pakistan can become HL7 Affiliate
- Benefits of affiliation through highlighting various requirements and modalities of **affiliation process and agreement.**



MoU: SEECS, Elixir and Holy Family under ICT R&D Funds

Elixir Technologies has developed HIS system for Holy Family Hospital.

The system they are deploying is non HL7 compliant.

SEECS will share experience with Elixir to make the system HL7 compliant.

Two meetings are held between SEECS and Elixir in provision of ICT R&D.

Collaboration with SKMCH & RC

- **SKM Cancer Hospital & Research Centre, (SKMCH &RC) Lahore, Pakistan**
 - Charitable organization .
 - Serving and caring cancer patients irrespective of their disability to pay costs.
 - Existing data storage management system :Oracle, fulfilling local requirements in a well manner.
 - **Problem:** Sharing information outside the organization .
 - **Solution:** Healthcare Systems Interoperability using HL7

Mr. Muhammad Afzal and Mr. Maqbool Hussain (Team Leads of HLH Project) visited SKMCH&RC, Lahore on the request of Mr. Muhammad Idrees Khokar, Manager MIS Department at SKMCH from 24th - 27th July, 2009.



Future Roadmap

- Developing HL7 V3 standard focusing on **semantic interoperability**
- Pakistan as next affiliate member on the agenda
- Working on **Semantic HER**: System Architecture and implementation
- Writing a book on end-to-end experience of designing and implementing HL7 v3.0 system has been initiated
- Joint PhD with Prof Bobel Bernd , Germany
- Prof Hiroki Suguri , Miyagi University , Japan

Conclusion

- Healthcare needs more inclusion of IT like any other industry e.g. banking, telecom etc.
- Targeting healthcare interoperability will create opportunities for various stakeholders (Healthcare providers, vendors, trainers etc.) to benefit from HL7 standard based system (domestically developed with global vision) sharing their clinical data.

Thanks for your attention

More details can be found at:

<http://hl7.seecs.edu.pk>

<http://hl7.org>