

**H** Health System

**S** Sharing Research Center

**IHIS**

<http://www.ihis.or.kr>

**I** Intelligent

**I** Information

# Developing Intelligent Health Information Sharing System

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## Center Organization

### Sub-project 1

**Kyungpook National University**

Development of Interface Engine  
(The Only Medical Informatics  
Research Team of Korea)

### Sub-project 2

**Seoul National University**

CDA and CDSS  
(The Best Physicians in Korea)

### Sub-project 3

**Kyungpook National University  
& Chonnam National University**

CDR & CCOW  
(The first Korean Team of HL7  
Project Accomplishment)

### Sub-project 4

**Hanyang National University**

Medical Image interface and  
Security for HIS/PACS  
(The Best Technology Possession  
in Medical Image transmission/  
Management and 3D)

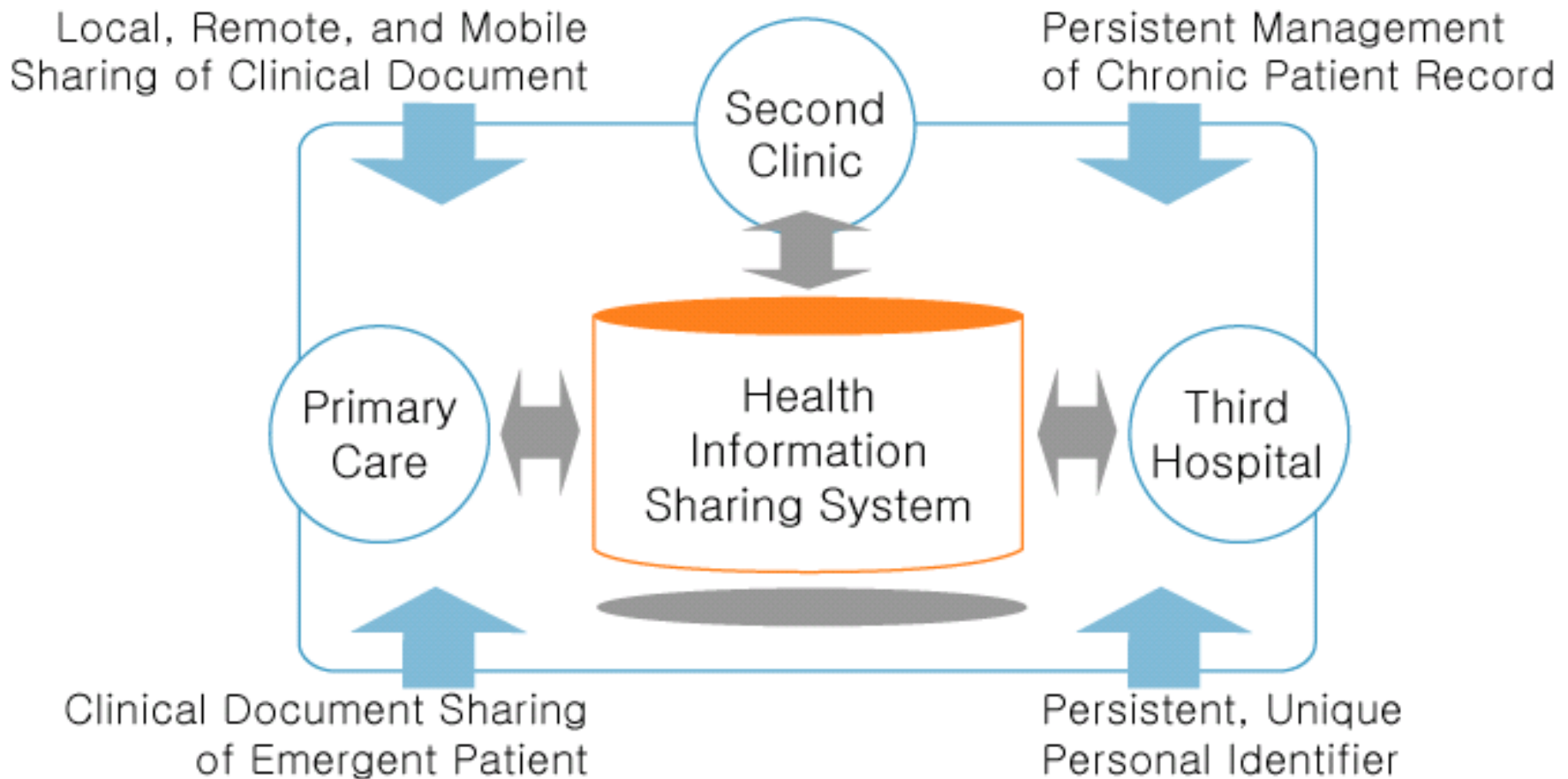
KT  
HYCARE  
QIBO  
INFINITT

# Goal

- EHR (Electronic Health Record)
  - EMR (Electronic Medical Record): episodic HER
  
- Package of Health Information System
  - Hospital Information System
  - Nursing Information System
  - Laboratory Information System



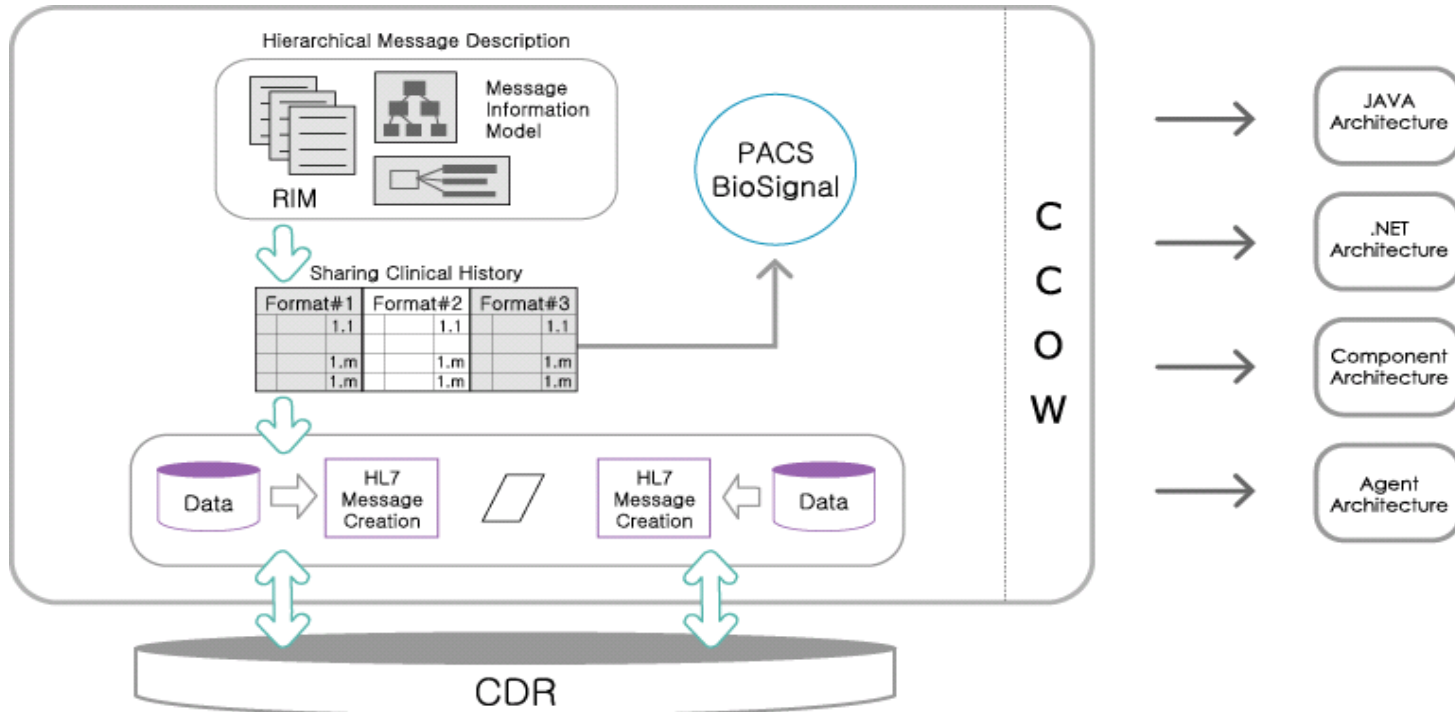
# Objectives



# Promise

- I need doctor's help since I had felt some problem about body condition or mobile physical examination result.
- I send these kinds of Vital Sign by HL7 engine to Primary Physician using Web Service
- Doctor has diagnosed, ordered pharmacy description, which has included some critical problem it can make the cause of patient death, But He didn't check its possibility.
- At this moment, Intelligent CDSS will be very helpful. Because this system makes alert message for doctor who can revise his order via recognition of old his history or family history. It's kind of life saver at anytime, anywhere.

# System Architecture

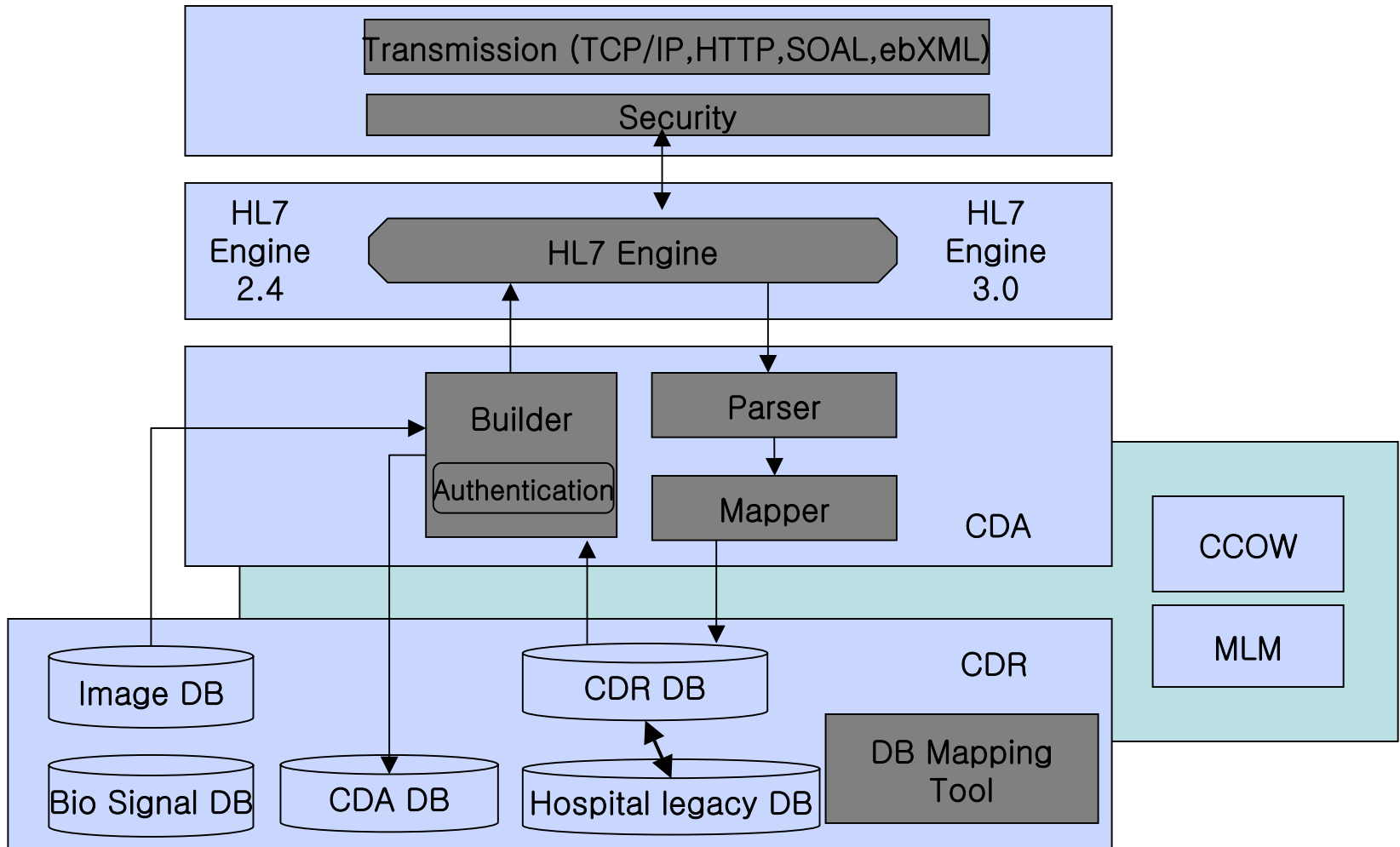


# Approach

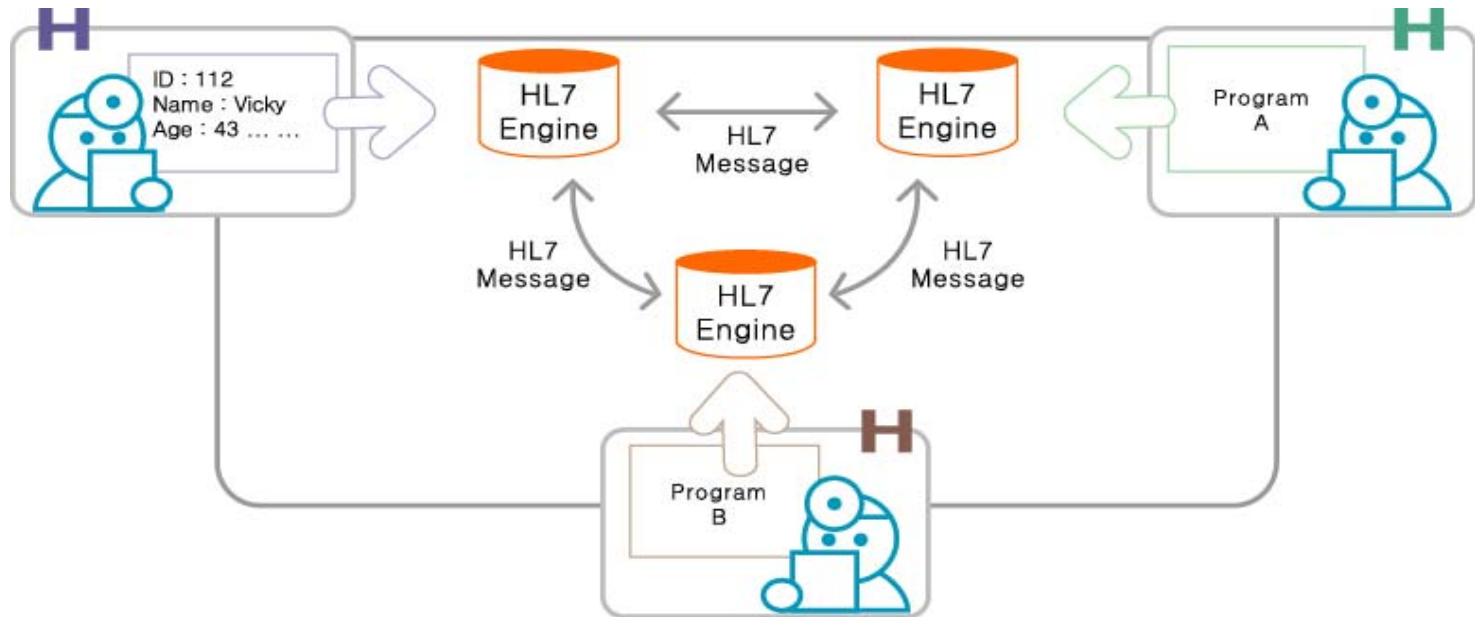
- Step1: HL7 Interface, Clinical Document Architecture, Local Clinical Document Repository
  - Multiagent Platform (Ex: FIPA-OS)
- Step2a: Centralized, Regionalized Clinical Document Repository
  - Object-Relational XML DB
- Step2b: Master Indexed CDR
  - GRID Computing
  - Lightweight Directory Access Protocol



# Framework

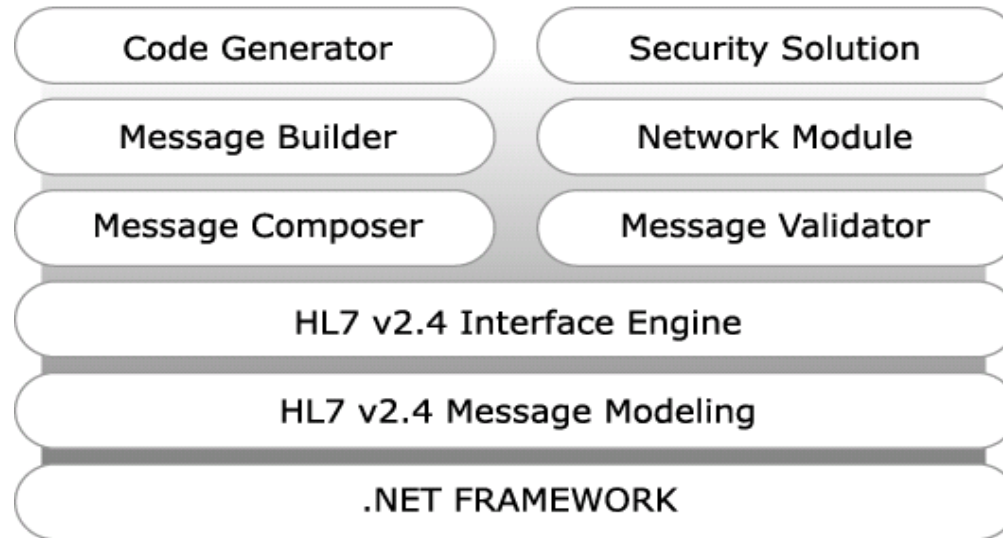


# Expected Effect



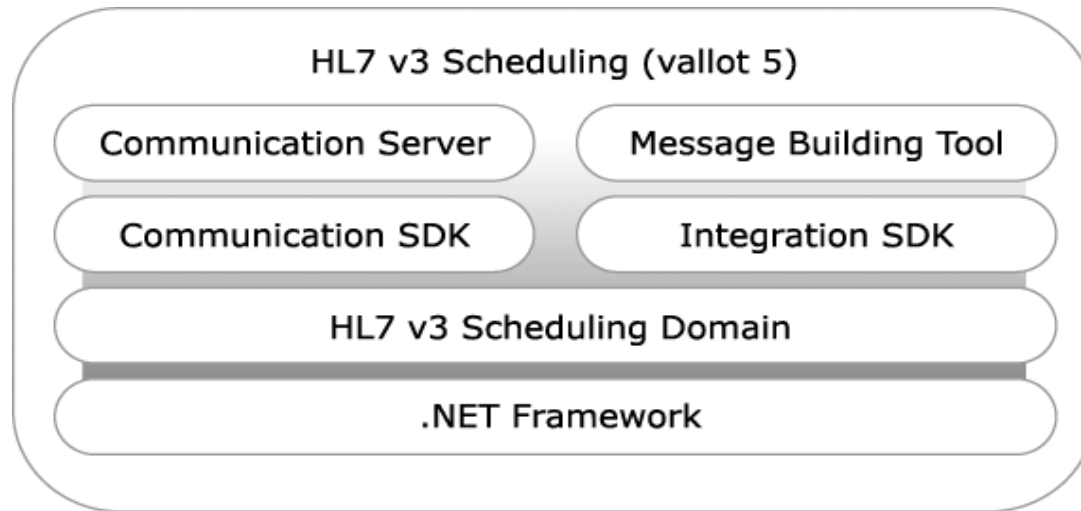
# TAWA: Talking with Agent - HL7 v2.4 Interface Toolkit

## Interface Toolkit Architecture

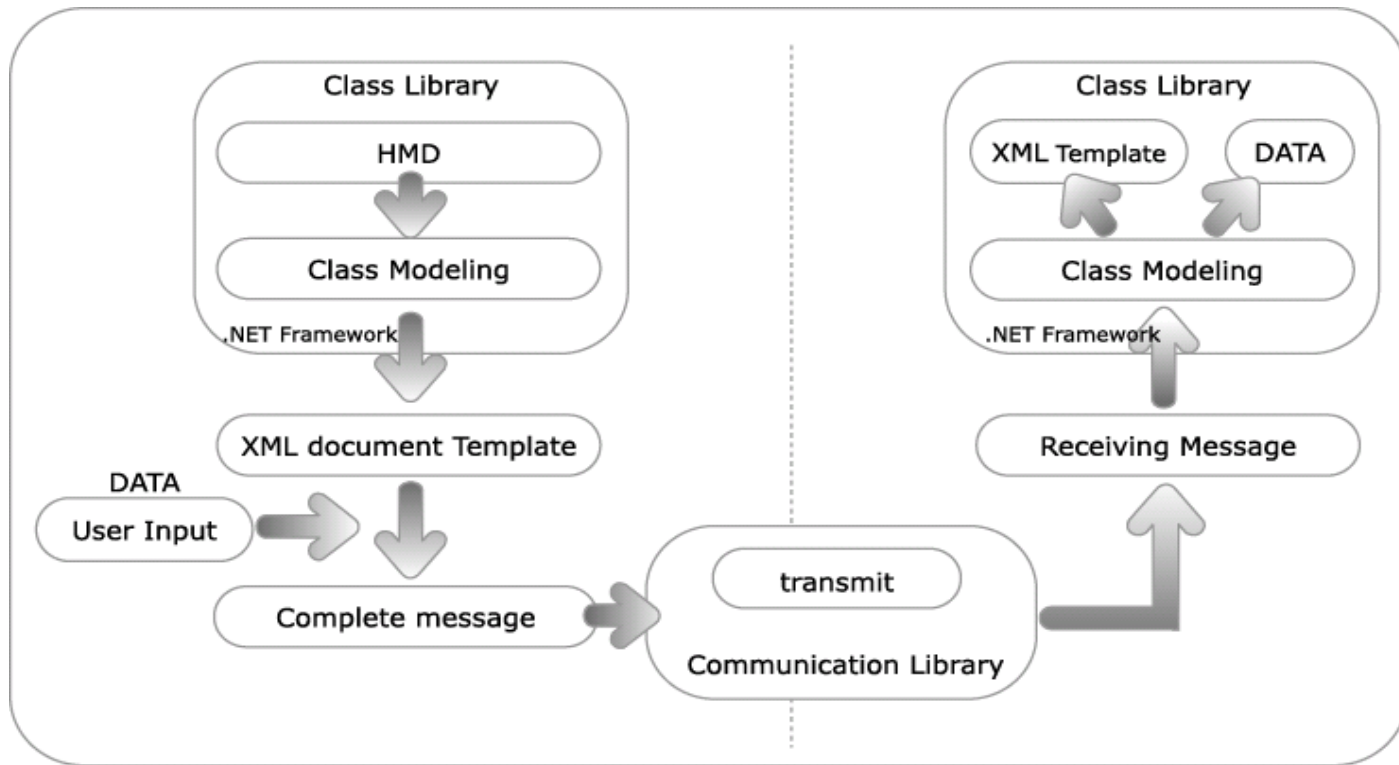


# SMEB: HL7 v3 Scheduling Message Building Tool

## SMEB System Architecture

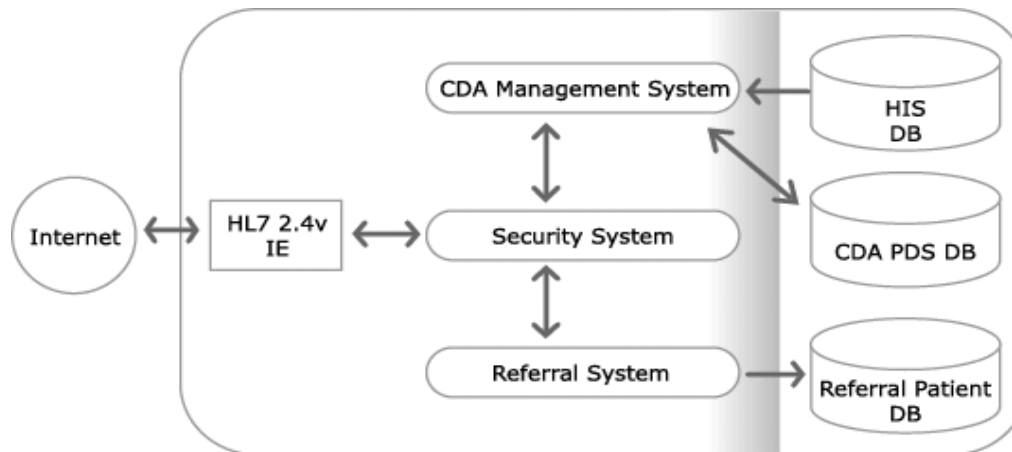


# System layout

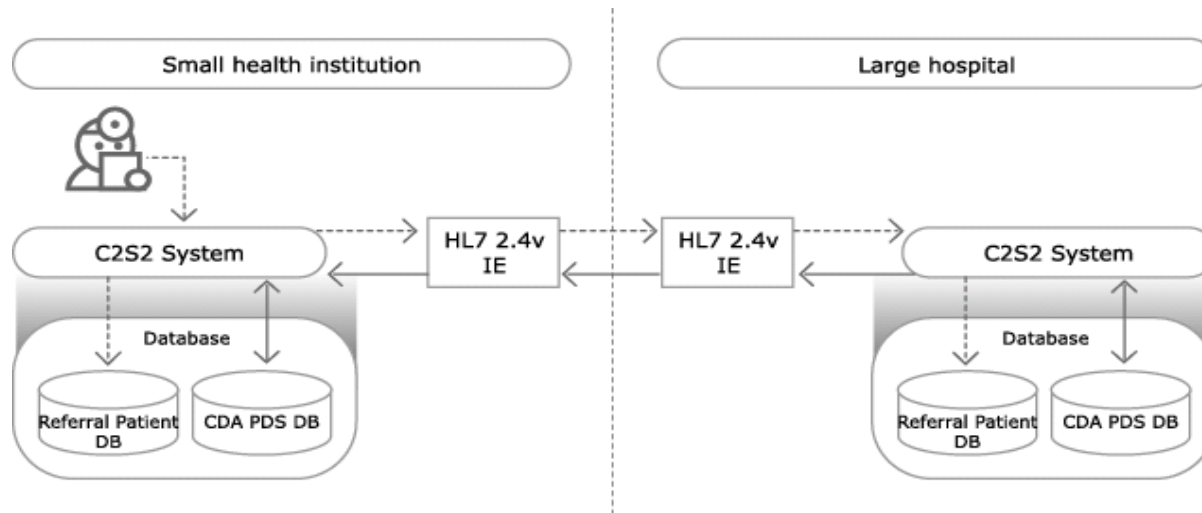


# Continuous Care Support System with HL7 v2.4 and Cache Based on C# and Web Service

## Structure of C2S2



# Flow of patient referring



# Considerations

- Commercialize vs Research
- V2.x vs V3
- Applications
  - Discontinuity of Care (Web Service of C2S2)
  - Tumor Report (Cancer Registry)
    - Oncologist Communication System
  - Nursing Intervention System
  - Laboratory Inf. System
  - Mobile Health
    - Chronic, Smart Home, Card, Phone



# How to Provide EHR

- It's kind of service configuration problem
- Web Service
- ebXML Registry
  - S/W Versioning
- GRID Computing
  - Multi Hierarchy

# Related Topics

- Multimedia EMR/HER
- Conformance Test
- IHE Korea

