

Workshop on

**Finding key drivers of ” eHealth ” and ” Brain healthcare” growth
- Service, Organization and Industrial levels of discussion for creating Key Performance
Indicator-**

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Introduction to ITU-T Q28/16 and its e-health standardization

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Why is standardization is important?

- Improved Interoperability
 - Products from different companies, countries can be used in the same way
 - Especially important in time of emergency
- Lowered cost of operation, purchase, etc.
 - More competition makes prices go down
 - More affordable to the user
- Lowered barrier to development and market entry
 - A wider market
 - More availability

International Telecommunication Union (ITU)

- The specialized agency of the United Nations (UN) that is responsible for issues that concern information and communication technologies.
- The oldest international organization, inheriting the International Telegraph Union, established in 1865.
- (2015 is the 150th anniversary).
- SOS, the international Morse code distress signal ($\cdot\cdot\cdot - - - \cdot$), was formalized by ITU, in 1906.
- ITU took the more prominent role of intergovernmental coordination after the Titanic disaster.

ITU's Structure

Radiocommunication

ITU-R

Coordinates global wireless communication

Standardization

ITU-T

Produces interoperable technical ICT standards



Development

ITU-D

Provides assistance to the un-connected

The **General Secretariat** provides intersectoral coordination for the whole organization

ITU-R: Radiocommunication Sector

Manages the radio-frequency spectrum and satellite orbits.



UNITED STATES FREQUENCY ALLOCATIONS THE RADIO SPECTRUM

RADIO SERVICES COLOR LEGEND

■ AERIAL TELEVISION	■ AERIAL TELEVISION	■ BROADCASTING
■ AERIAL TELEVISION	■ LAND MOBILE	■ BROADCASTING
■ AERIAL TELEVISION	■ LAND MOBILE	■ BROADCASTING
■ MARINE	■ MARINE MOBILE	■ BROADCASTING
■ BROADCASTING	■ MARINE MOBILE	■ BROADCASTING
■ BROADCASTING	■ MARINE MOBILE	■ BROADCASTING
■ BROADCASTING	■ METEOROLOGICAL	■ BROADCASTING
■ BROADCASTING	■ METEOROLOGICAL	■ BROADCASTING
■ FIXED	■ MOBILE	■ BROADCASTING
■ FIXED	■ MOBILE	■ BROADCASTING
■ FIXED	■ MOBILE	■ BROADCASTING

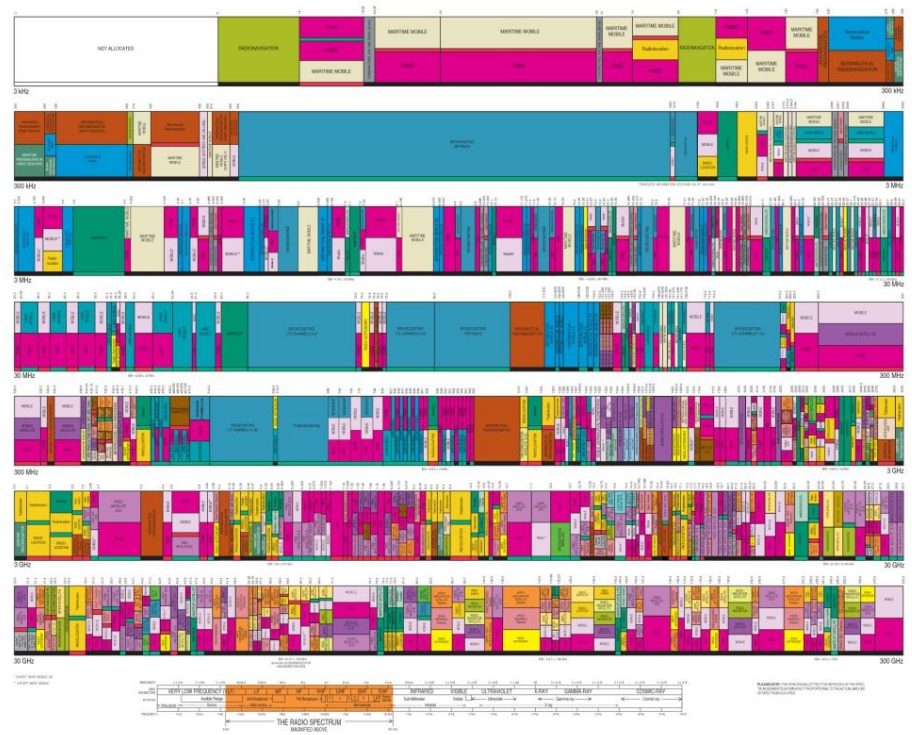
ACTIVITY CODE

■ GOVERNMENT EXCLUSIVE	■ GOVERNMENT NON-GOVERNMENT SHARED
■ NON-GOVERNMENT EXCLUSIVE	

ALLOCATION USAGE DESIGNATION

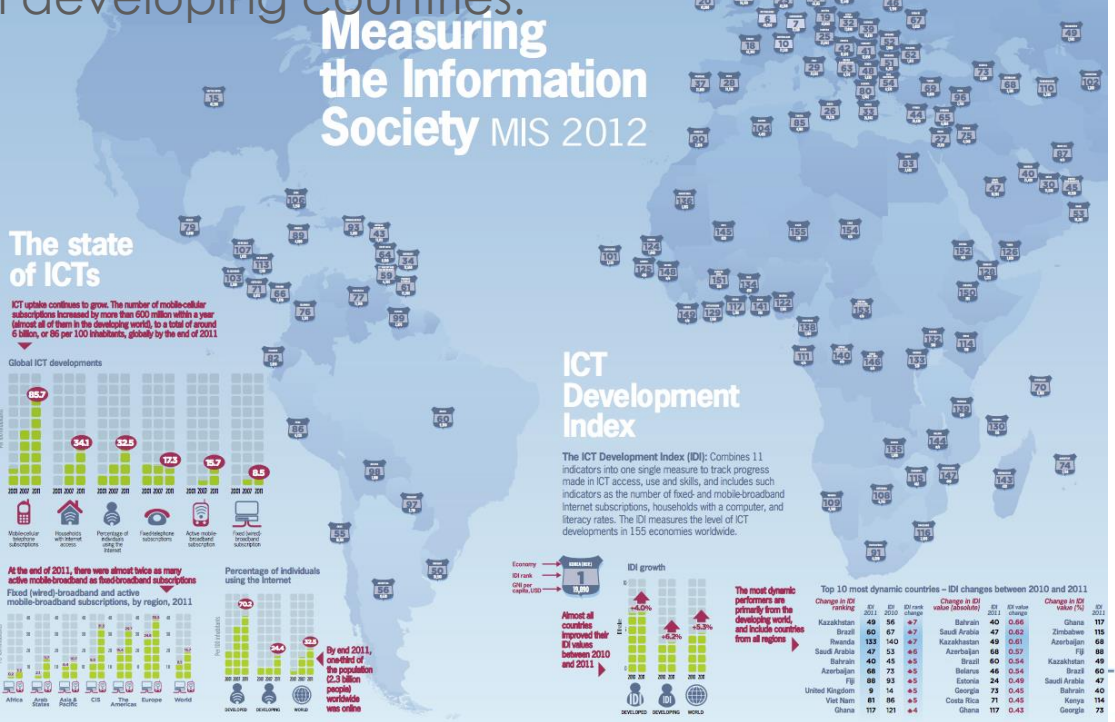
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U.S. DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Office of Spectrum Management
October 2012



ITU-D: Development Sector

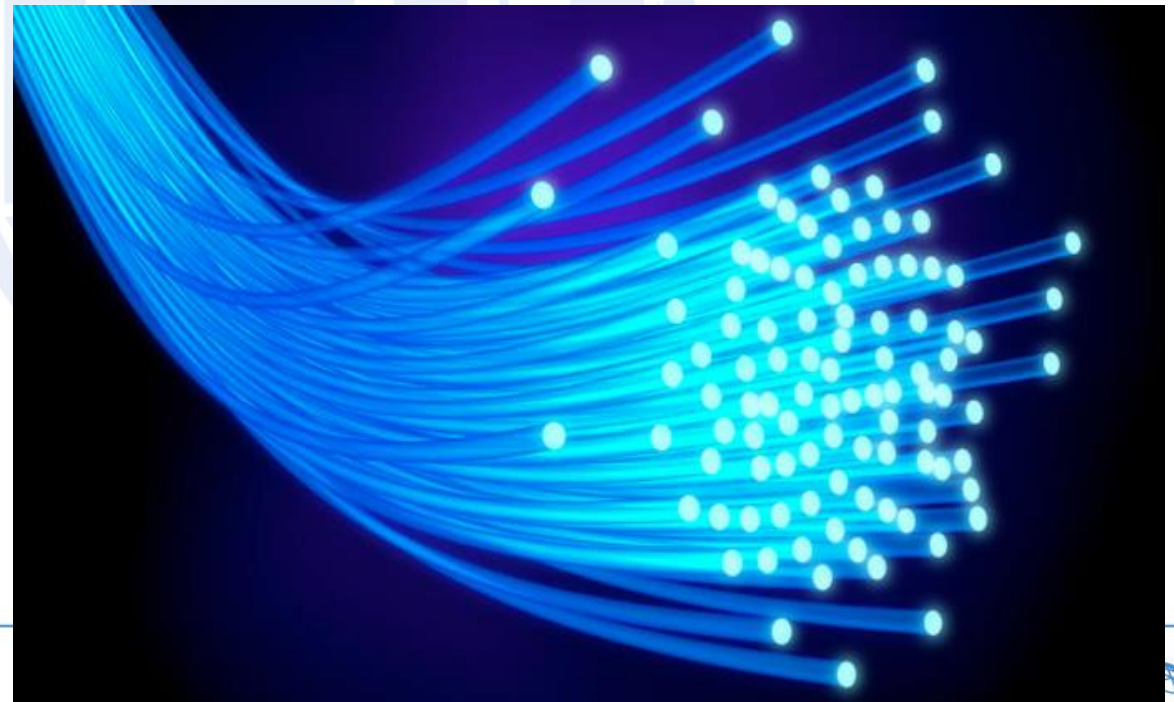
Fostering international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication/ICT equipment and networks in developing countries.



ITU-T: Standardization Sector

Provides a **neutral platform** where governments *and* the private sector develop international standards covering all fields of telecommunications.

Defines tariff and accounting principles for international telecommunication services.



Some Well-Known ITU Standards

- International Telephone country code
 - (ITU-T Rec. E.164) “The international public telecommunication numbering plan”
- Data communication over telephone network
 - (ITU-T Rec. G.992/G.993) “Asymmetric digital subscriber line (**ADSL**)”
- Public-Key and Certificate
 - ITU-T Rec. **X.509** “Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks”
- Video Compression
 - ITU-T Rec. **H.264**

ITU: Emmy Award Winner



Some ITU-T Standards on Accessibility

- F.790 - Telecommunications accessibility guidelines for older persons and persons with disabilities
- V.18 - for text telephony
- F.703 - Multimedia conversation service description. Includes definitions of the accessible conversational services
- H.702 - IPTV Accessibility Profile
- Technical Papers for Accessible Remote Participation and Accessible Meetings as well as Accessibility Checklist

ITU-T Q28/16

- focuses on standardization of multimedia systems to support e-health applications.
- achieve interoperability among systems and to reduce the cost of devices through economies of scale.
- provide the environment for harmonization and coordination of the development of a set of open global standards for e-health applications.

ITU-T Q28/16 (cont.)

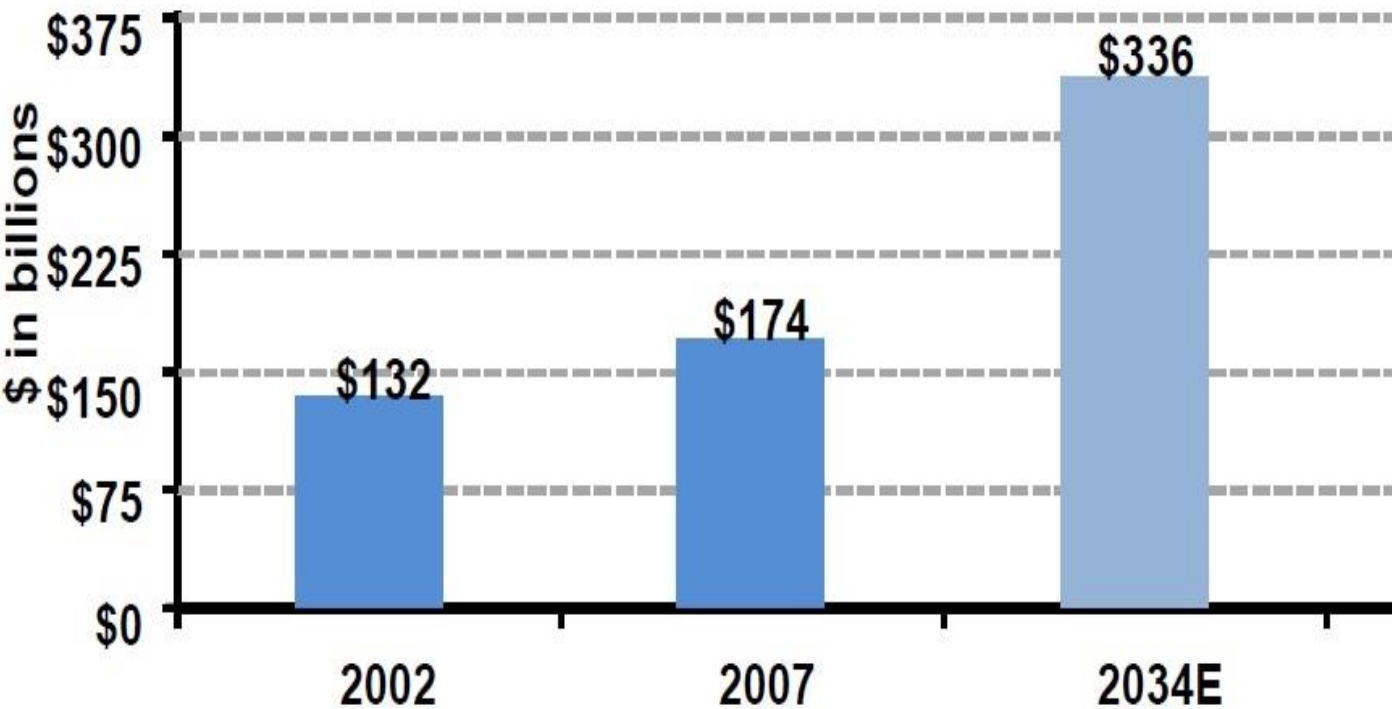
- Organized WHO-ITU Joint Stakeholders' Consultation on Safe Listening Devices on 1 October 2015
- Based on the discussion of the above workshop, a new draft Recommendation F.SLD "Guidelines for safe listening devices/systems" was initiated

E-Health: Urgent Issue

- With the population of over 7 billion, the countries around the globe are facing new challenges, especially in healthcare.
- That people living longer everywhere, with a declining fertility, means that more and more countries will be confronting the challenges posed by the ageing of their populations.
- Ageing society will face impacts of medical issues, e.g., chronic diseases.
- As the aging population grows rapidly, the cost of healthcare is also rapidly rising, giving rise to economic problems. This made many to look to e-Health as a means to ameliorate the situation.

Economic Impact of Chronic Disease

Diabetes is just a tip of Iceberg



Same for pulmonary disease, heart failure, hypertension

- Chronic Disease consumes 70% of Healthcare Spending
- Diabetes is just one segment.
- But Diabetes affects 10% of the population but incurs 30% of the medical costs

Better Monitoring and Control

= reduced costs

- 10% better control of glucose will lead to 37% reduction complications
- On average, non-compliance increases per-patient costs US\$3,400 annually

	Compliant	Non-Compliant	Difference
Annual Cost/Patient	US\$ 9,828	US\$ 13,212	US\$ 3,384

Better monitoring will save billions of US\$ per year

ITU (Continua)-compliant e-Health devices

- Many e-health device and consumer device manufacturers are making Continua compliant devices such as pedometer, weight-scale, blood pressure cuff, glucose monitor, etc.
- Testing and Certification processes are established (with “Continua Certified” Logo)
- They are already available in the retail market



Home network
Gateway



Pedometer



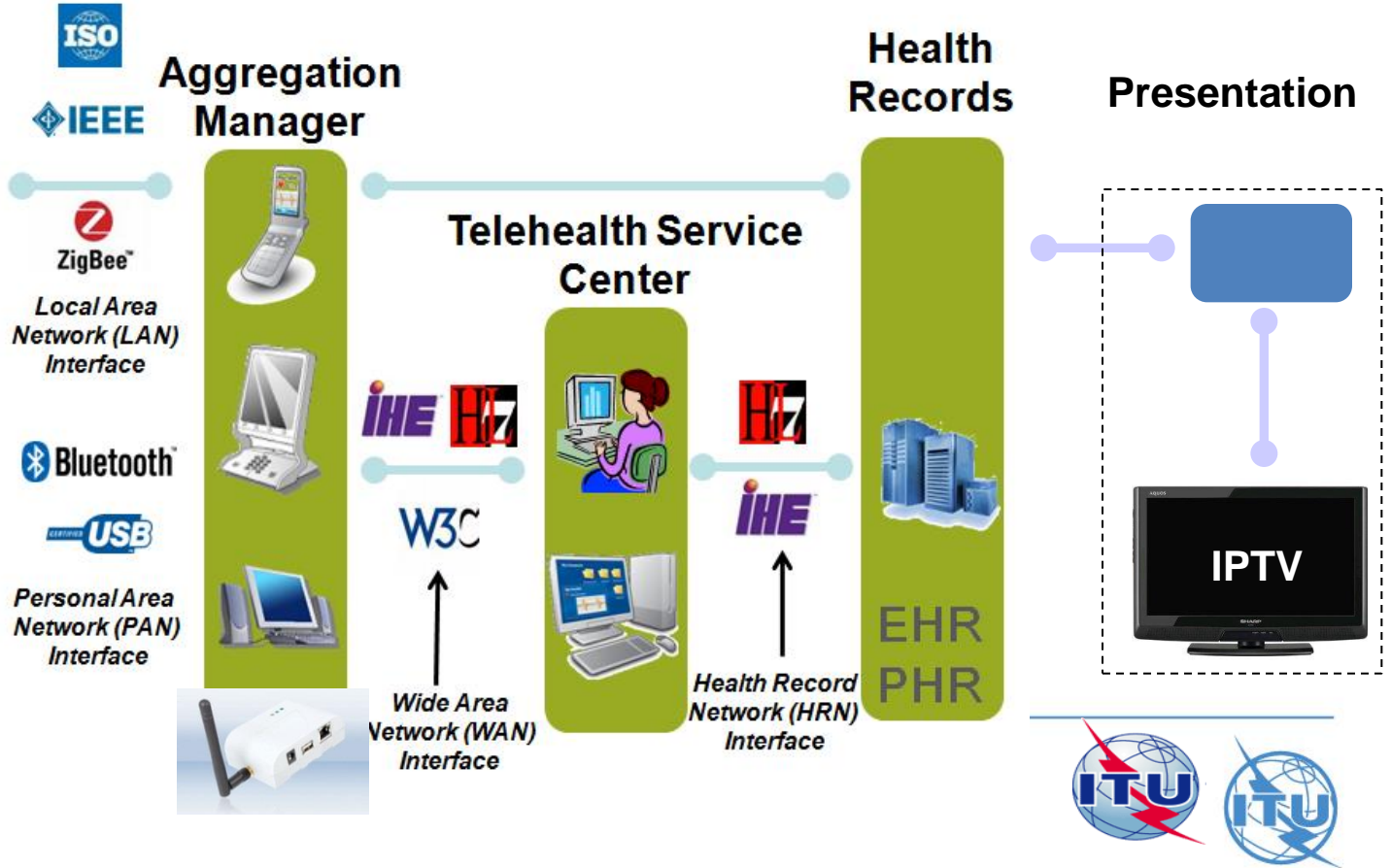
Blood pressure cuff

Multimedia Interface for e-Health

Continua Interfaces & Standards Architecture

Personal Device

- Thermometer
- Oximeter
- Pulse / Blood Pressure
- Weight Scale
- Glucose Meter
- Cardio / Strength
- Independent Activity
- Peak Flow
- Adherence Monitor
- Physical Activity
- Insulin Pump

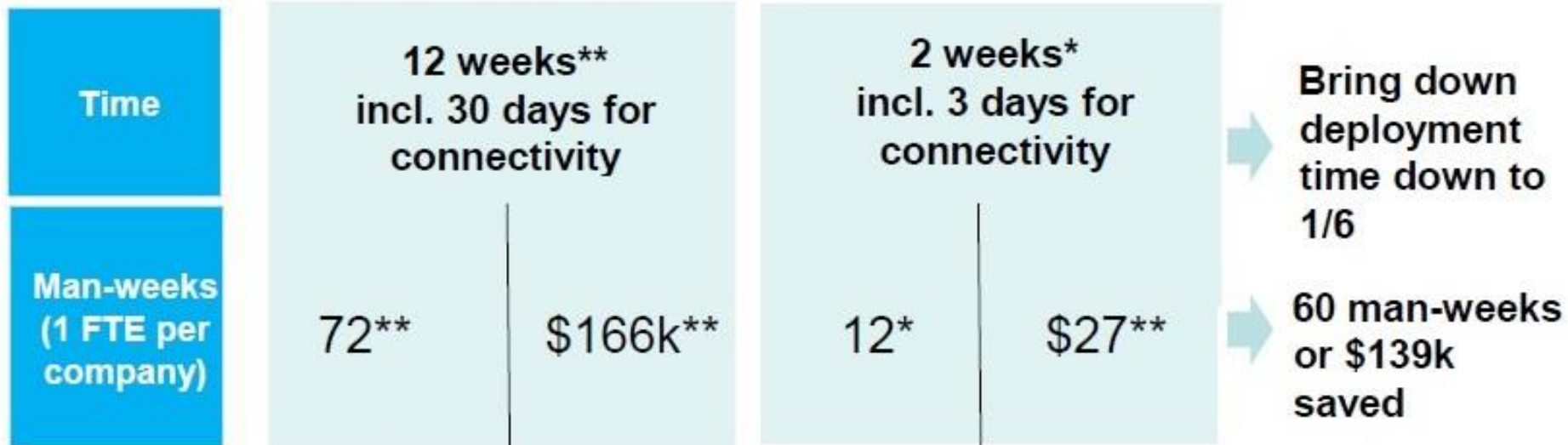


Time-to-Market Advantage of Standard

- Japan Disaster Cardiovascular Prevention Network
- 1,500 survivors of 311 (Great East Japan Earthquake) living in evacuation camps
- Determine comparative time and cost of implementing Continua-certified devices, according to its Design Guidelines

Non-Continua

Continua



→ Interoperability assured quality because each company could focus on their module

Multimedia Brain information Platform: MBI-PF

i) Ecosystem for visualizing the current brain conditions



ii) Ecosystem for controlling brain status in the future



Multimedia Brain Information Platform

Access

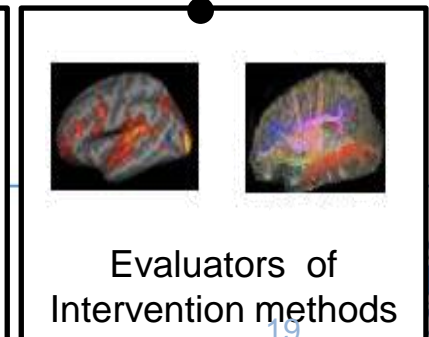
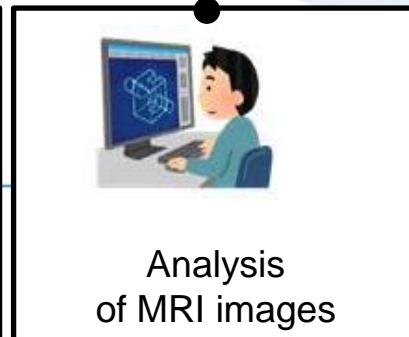
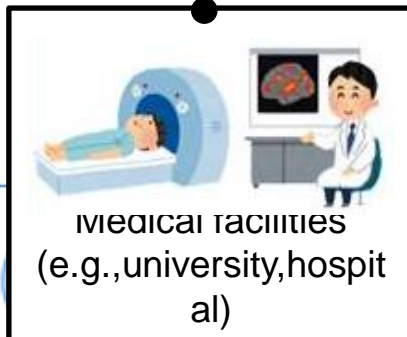
- ID management
- Permission control

Exchange

- Interface
- Transport protocol

Browse/Edit

- Data format
- Metadata



Other work Items in Q28/16

- Safe-Listening Devices
- Lifelog
- Aviation and Epidemics Control
- Telemedicine and Remote e-health