Draft report of P3 of SC 35 - Roadmap and Action Plan for 2024-'25

1. In 2020, SC 35 (in an earlier name) published a detailed report on Active Assisted Living, focussing on global (esp. European context) but also covering in detail Indian context. It was an excellent background document useful to plan the work of SC 35 in a meaningful way both through participation and responding to SyS AAL deliberations (typically at WG level) as well as through appreciation of the underlying themes for incorporating in the body of work of SC 35 to fulfil Indian needs and context.

2. Classical example of the above was the preparation of the Indian ICT Accessibility Standard (IS 17802, Part 1 - Requirements and Part 2 - Conformity criteria) in 2020 and 2021 respectively. They have since been made mandatory by DEPwD under Rule 15 and have become legally enforceable. Further work is going on in operationalizing the Rule and the Standard in practice. It was a standard which harmonised and incorporated Indian requirements like inclusion of all official Indian languages as well in its ambit of requirements.

3. Since then, SC 35 has been somewhat content with responding to the standards and drafts that came its way from SyS AAL for comments and voting. No doubt, many SC 35 had become members of some WG of SyS AAL or another but the level of contribution and participation remained low-key for various reasons. One of the Indian members, in fact, had been inducted as a member of Chairman's Advisory Committee, but, again, no influential involvement has happened since then also.

4. It is in the above context, in the last SC 35 meeting, a Panel, P3, was set up to prepare a Road-map and Action Plan for 2024-'25 so that serious efforts can be put in by SC 35 on preparation of Indian standards that will serve the needs of Indian stakeholders (It did not

matter to what extent, these will be harmonised with global standards, as long as they also took care of Indian stakeholders' needs and catalyse the growth of the industry and users in terms of meaningful use and affordability, besides the attributes of safety, security, usability, privacy and interoperability). At the devices level, no doubt, domain issues like functionality, robustness, performance etc. will come into picture based on widespread industry consensus.

5. There are many sub-themes we need to look at while looking at Road-map for AAL. For instance, one such is WHO's Global Strategy on Digital Health - 2020-2025. Since there are many standards and specialised SDOs on this topic alone, we need to have an anchor within SC 35, through a SIG (Special Interest Group), supported by peer experts (from outside SC 35), BIS Secretariat and SC 35 volunteers to finalise the list of standards to make, write standards and the background thereof for the benefit of stakeholders.

6. Recently, SyS AAL has brought out a SBP (Strategic Blue-Print) somewhat analogous to what we are attempting. It has come at the right time. Here are some excerpts of relevance:

7. **"A. SYC AAL – ACTIVE ASSISTED LIVING**
    - Are there any new or emerging trends in technology that will impact the scope and work activities of the TC? Please describe briefly.
    - Do you need to update your scope to reflect new and emerging technologies? If yes, will these changes impact another TC's scope or work activities?
    - If yes, describe how these will impact another TC(s) and list the TC(s) it would impact"

A.1 Introduction

The IEC has a leading role in the development of standards for use by all persons. SyC AAL has been established to address concepts,

products, services and systems combining technologies and social environment with the aim of improving the quality of people's (AAL users) lives. The AAL user is any person (of any age) who uses or benefits from Active Assisted Living (AAL) products, services and systems. The multiplicity of AAL technologies that the industry is developing, the large number of standards on the market today and the currently fragmented standardisation landscape are challenges for the IEC in developing international and interoperable standards from which the AAL user can benefit. Therefore, the IEC has created the Systems Committee AAL which is tasked to develop systems standards taking into account the following: products, services and systems, safety, security and privacy.

A.2 Vision

Foster standardisation of Active Assisted Living (AAL) products, services and systems to enhance the quality of life and to enable independent living for ALL users of all ages.

A.3 Scope

• Create an understanding of Active Assisted Living (AAL) that takes account of evolution
of technology and the market in order to benefit all AAL users.
• Foster AAL standardisation by
- enabling usability and accessibility of AAL products, services and systems
- enabling cross-vendor interoperability of AAL products, services and systems
- addressing systems level aspects such as safety, security and privacy
• Communicate the work of the SyC AAL and collaborate to foster a strong community of stakeholders- 3 - SyC AAL/349/DC

At the core of the SyC AAL work is the concept that AAL can be described by four levels of assistance and five use case categories.

Use case categories:

1. Prevention and management of chronic long-term conditions
    - Prevention, early detection and efficient management of chronic long-term conditions-
    - Provision of AAL solutions for persons with identified risk factors or chronic conditions or both
    - Improvement of medical prescriptions and adherence to treatment by provision of accurate information to the healthcare professional
    - Enable the wellbeing of people with chronic conditions and their communities (family, AAL caregivers, neighbourhood, AAL service providers, care system, etc.)
2. Social interaction
    - Enabling of people of all ages to be active and socially connected in the society, from both a societal and personal perspective, effectively contributing to their health, overall quality of life and social inclusion.
    - Including all systems for social connection and networking as well as the possibility for knowledge transfer
3. Mobility
    - Enabling of people`s mobility in terms of moving in the home environment and domestic environment
    - Orientation and navigation
    - Transportation and travel activities
    - Encompasses all systems which are useful for mobility, e.g., mobility aid, safety and security on the move, transport, and information on meteorological conditions
4. Health & wellness
    - Effective management of health and wellness
    - Prevention of functional decline and frailty

- Including all technical support, for example for fall detection and prevention, ambient sensors or actuators, alarm systems and location tracking.
- Supporting sustainable care models

5. (Self-)management of daily life activities at home
    - Enabling assisted living and helping persons to continue managing their daily activities in their home.
    - Living independently for longer, with as little (professional) help as possible and with the choice and control over decisions, equipment and assistance affecting them.
    - Living actively in the sense of remaining in charge of their own lives and participating in society the way they want. Including all techniques and systems which help and support the AAL user during his/her daily life (like managing an AAL system, a calendar or reminder or other support system).
    - Supporting of AAL care assistants

B. MANAGEMENT STRUCTURE OF THE TC

- AG 1: Chair's Advisory Group - Strategy and Coordination
- WG 1: User Focus
- WG 2: Architecture and Interoperability
- WG 3: General specifications, Quality and Conformity Assessment
- WG 4: Regulatory Affairs
- WG 5: AAL in the connected home environment
- MT 6: Terminology
- WG 7: Cooperative multiple systems in connected home environments - Functional safety of electrical/electronic safety-related systems - AAL aspects
- JAG 8: SyC AAL Joint Advisory Group Communication with TC 100 and TC 124

C. BUSINESS ENVIRONMENT

D. MARKET DEMAND

F. TRENDS IN TECHNOLOGY AND IN THE MARKET

- G. SYSTEMS APPROACH ASPECTS (SEE DIRECTIVES PART 1 ANNEX SP)

  The SyC AAL is working closely with the following groups.
  • IEC Technical Committees: TC 23, TC 34, TC 59, TC 61, TC 62, SC 65A, TC 79, TC 100, TC 124
  • IEC Systems Committees: Smart Cities- 16 - SyC AAL/349/DC
  • ACART, Advisory Committee on Applications of Robotic Technology, including electrotechnology
  • ACSEC, Advisory Committee on Information security and data privacy
  • ISO/IEC JTC 1/SC 35, User Interfaces
  • ISO/IEC JTC 1/SC 41, Internet of Things and related technologies
  • ISO/IEC JTC 1/SC 43, Artificial Intelligence
  • ISO/TC 159, Ergonomics
  • ISO/TC 173, Assistive products for persons with disability
  • ISO/TC 215, Health informatics
  • ISO/TC 299, Robotics
  • ISO/TC 314, Ageing societies
  • ETSI SmartBAN
  • ITU-T/JCA-AHF, Joint Coordination Activity on Accessibility and Human Factors

  The future operation of the SyC AAL may reveal the need to extend this list further.

H. CONFORMITY ASSESSMENT

I.3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES”

IEC SyS AAL versus SC 35 - 1

Use-cases (Sys AAL has a compilation and a standard on the relationship between Use-cases and Standards while SC 35 hasn't built any use-case portfolio at all); Standards (SC 35 has developed Indian ICT Accessibility Standard which is being used for enforcement while SyC AAL does not have anything equivalent); Recent Indian successes (Accessibility); Product development by Industry in early stages; Adoption is picking up though it is also in early stages\; Taxonomy and Standards portfolio are different in the two.

IEC SyS AAL versus SC 35 - 2

Picking Domestic standards' needs and relevance from Global standards map and our understanding of domestic ecosystem.

Recommendations for 2024-'25 Roadmap and Action Plan

1) Recognize the relevance of AAL (Including accessibility) in Indian context in an Indian way.
    a) Get some uptodate statistics
    b) List out the taxonomy
2) List the selected standards that can be made in 2024-'25 @ Systems, Devices/ Equipment level that fulfil the criteria of interoperability, safety, security, usability, privacy and cost-effectiveness/ innovation-driven
    a) Engage with industry, start-ups and R&D/ Academia for building scale and demand
3) Complete the process of standards publication and innovative products that demonstrate the standards.

As per the above, the following are recommended as part of the road-map for ‘24 - ‘25:

1. Systems Level: TR on AAL in Indian context - Anchor person: Dr. Thanga Prabhu, Apollo hospital, Chennai
2. Wearables: Technical standard(s) - Anchor person: Dr. Panda, IIT, Kanpur
3. Consumer and Home Medical/ Mobile Robots - Anchor person: Prof. Rohan Pal, CS Department, IIT, Delhi
4. Telemedicine/ Teleconsultation - Anchor person: Name (Gaur Sundar of C-DAC, provisionally) is being ascertained in consultation with Chairman of SC 35
5. Networking gear at home that interconnects all gadgets of AAL at home and provides interoperability with ease and in an user friendly manner by an autonomous manner - Anchor person: Being located

—----------

Annexure I: Proposed Topics for Standards making under SC 35 during '24 - 2025 and Anchor persons

S. No.	Topic (Broader) (Based on Indian ecosystem priorities, as discussed and decided by P3 members - Relevant, viable, doable)	Concerned Global/ National SDO/ Standard number (Courtesy: Dines)	Anchor person identified	Support system extended to realise the publication of the standard within 12 months
1	TR on AAL in India			Dr. Thnga Prabhu, Apollo, Chennai (Formerly a member of MoH&FW committee of EHR/ EMR standard making, was with GE, was with St. Johns, Health informatics is his strength - SME, connects well with peers in hospitals, government and industry
2	Telemedicine, Teleconsultation	MoH&FW, Supten's list	Sundar Gaur, C-DAC, Pune (will be supported by Dr. Sanjay Sood, another doer and veteran), Is a member of global SNOMED-CT	Same as above. We will bring in all stakeholders from industry, government, public and private hospitals and harmonise with global standard (UN,

			consortium, builder of HL 6, LOIN C libraries, Reviewer and auditor of others' implementations, Trainer, SME; He is also a convenor of BIS's SC on Health Informatics where they are formulating standards in this area. We can jointly work with them, with spcial emphasis on AAL context or be a simple observer.	Canada, US, EU, others mentioned by Supten and Dinesh)
3	Wearables	Dinesh's list + BIS list	Prof. Aman, IIT, Kanpur. They have built wearables (I think it is the Apple watch equivalent which got awards and they have done Transfer of Technology successfully. Prof. Aman has agreed to take up the responsibility.	Wearables are a growing industry in India with a lot of potential. This seems like a good time to engage with them.
4	Robotics/ Robots - Commercial and medical robots	Dinesh's list	We have identified and reached out to Prof. Rohan Paul of	This is again a potentially promising topic, just as Drones

	used at home		CS department, IIT, Delhi. He has agreed to take up the role.	caught the imagination of a lot of policy-makers a few years back leading to follow-up investments. Seems like a good time from consumer and industry alike. Exports can be a long-term (3-5 years) pay-off.
5	Plug and play networking gear (box) at home for AAL users	IETF, Dinesh, Others	I'm still searching for an anchor person. Am confident of locating one.	Same as above.

Support system envisaged for formulation of identified standards for next year and associated launch with stakeholders for implementation (R&D, Innovation, manufacture and market adoption)

1. **Identify the anchor person and give him/ her a clear role (document them; no informal briefing), manageable by him/ her within his/ her commitments - taking his/ her Subject Matter Expertise, Group's strength and passion into account.**
2. **Attach a volunteer from SC 35 to him/ her.**
3. **Set up a Special Interest Group (SIG) for each topic or together in SC 35, just the way we have been operating Platforms - Jyothi to anchor it, hence one composite forum**
4. **Set up one or two researchers support group**

—----------

Annexure II - A survey of Global and Domestic standards in the context of road-map

Spread-sheet is attached.

—----------

Annexure III Members of Road-map (P-3) Committee of SC 35