Robotics Domain Task Force Preliminary Agenda ver.1.0.1 **robotics/2009-06-01**

OMG Technical Meeting - **San Jose, Costa Rica** -- June. 22-26, 2009

Because the swine flu continues to spread all over the world,
most of our volunteers are NOT able to come to the meeting.
So we decided all the process of WG activities bring forward to the San Antonio meeting in September.

http://robotics.omg.org/

		TF/SIG				
		Host	Joint (Invited)	Agenda Item	Purpose	Room
Monday:						
12:00	13:00			**LUNCH**		Real 1
13:00	18:00			Architecture Board Plenary		**Cedro 1**
Tuesday:						
12:00	13:00			**LUNCH**		Real 1
Wednesday						
8:30	**10:30**	OMG		**OMG Plenary** **(provide a free, light breakfast for all)**		Real 2
12:00	**13:00**			**LUNCH**		Real 1
13:00	**13:05**	Robotics		Robotics-DTF Plenary Opening Session	Robotics plenary openning	Jacaranda 2
13:05	**13:30**	Robotics		**Special Talk: Behavior Classification for Lifestyle Support Service** **- Miwako DOI (Toshiba)**	presentation and discussion	
13:30	**14:00**	Robotics		Robotics-DTF Plenary Wrap-up Session (Future activity discussion)	Robotics plenary wrap-up	
14:00				Adjourn plenary meeting		
14:00	**15:00**	Robotics		Follow-up group activity	plannning for next activies	Jacaranda 2
18:00	20:00			**OMG Reception**		Real 1
Thursday						
12:00	13:00			**LUNCH**		Real 1
17:00	18:00	MARS		Agenda Coordinatging Meeting	planning for next meeting	Laurel 2
Friday						
8:30	12:00			AB, DTC, PTC		Arboleda 2
12:00	13:00			**LUNCH**		Arboleda 1
Other Meetings of Interest						
Monday						
9:00	17:00	OMG		Tutorial- Architecture-Driviven Modernization (ADM) - case Studies Information Day		Laurel 1
9:00	17:00	OMG		Tutorial- Model Driven Architecture (MDA) and Unified Modeling Language (UML)		Real 2
Tuesday						
7:30	9:00	OMG		Liaison ABSC		Cedro 3
9:00	12:00	OMG		BPM-SOA Information Day		Real 2
18:00	18:30	OMG		OMG Technical Meeting Special Welcome Reception		
17:00	18:00	OMG		RTF-FTF Chair's Workshop		
Wednesday						
9:00	17:00	OMG		Tutorial - MARTE		Cedro 3
Thursday						
9:00	16:30	OMG		SysML Modelica WG		Itabo

Please get the up-to-date version from http://staff.aist.go.jp/t.kotoku/omg/RoboticsAgenda.pdf

TOSHIBA
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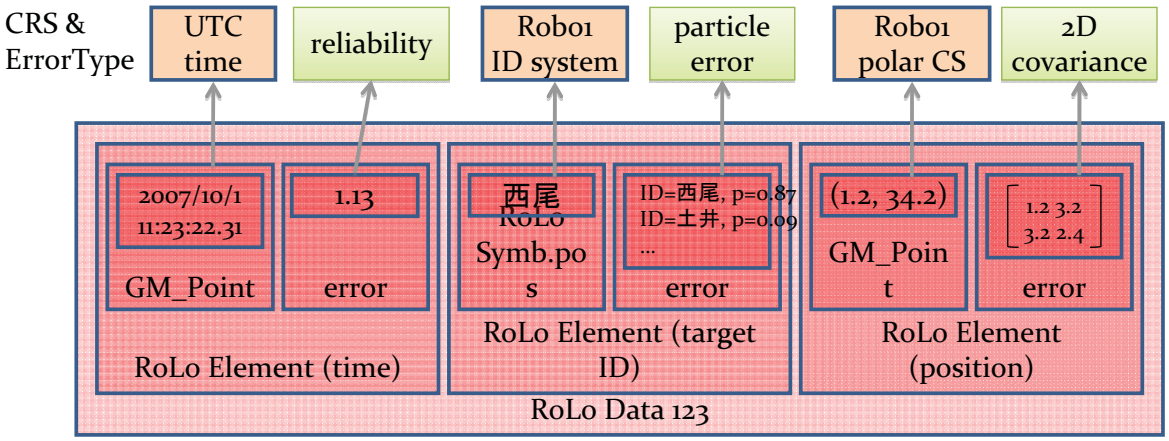
NRF
Network Robot Forum

Behavior Classification for Lifestyle Support Service

Miwako Doi
TOSHIBA
Network Robot Forum

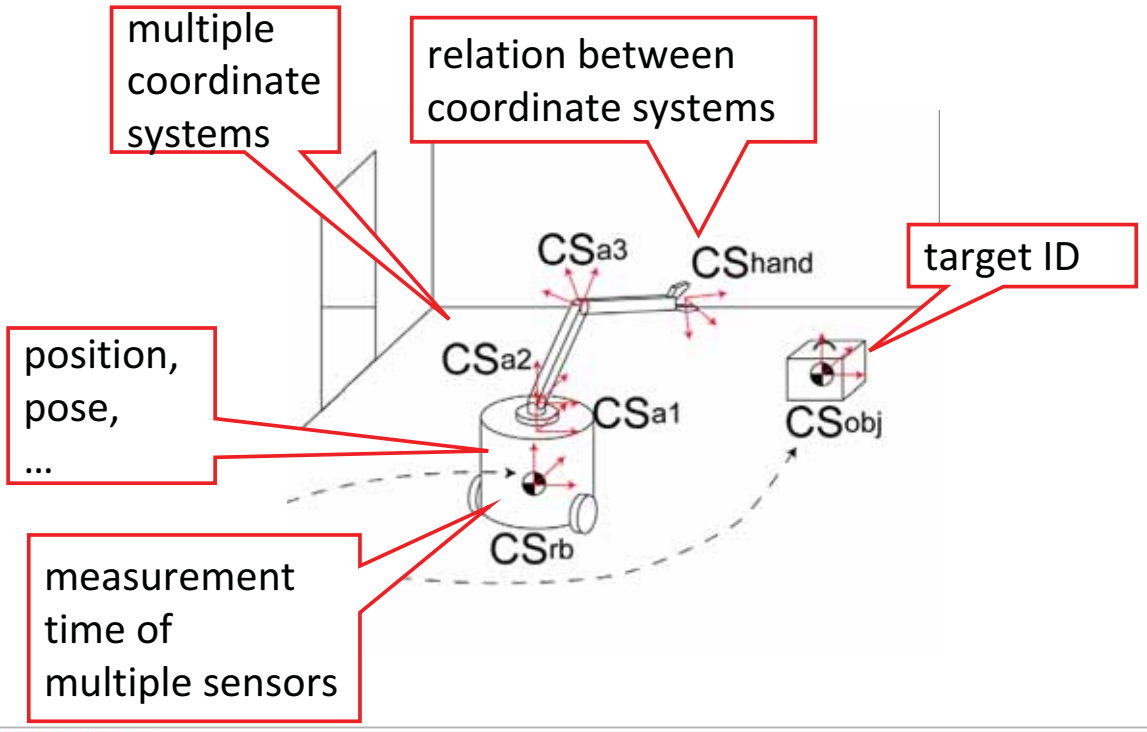
RoLo Architecture



Treat various types of location-related information in *a uniform manner*

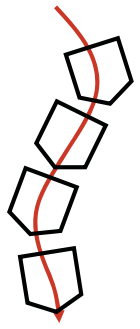
Cited from
http://www.dpc.jipdec.or.jp/gxml/contents/shiryou/2008/jiku_yokousyuu/05_Nishio.pdf

Requirements in Robotics (1)



Requirements in Robotics (2)

- **Navigation or Manipulation requires** High-Precision **localization**
  - **Measurement Time** and **Error Information** is Essential
  - Especially when mixing multiple sensor outputs



Robot position

time	x	y	θ
10	2	6	10
12	0	4	-10
14	-4	2	-9
16	-3	0	1

Sensory data

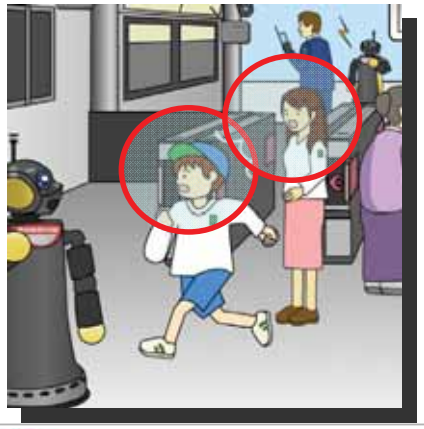
time	d
10	5
13	10
15	12

Takeuchi, Tsubouchi, Yuta 2005

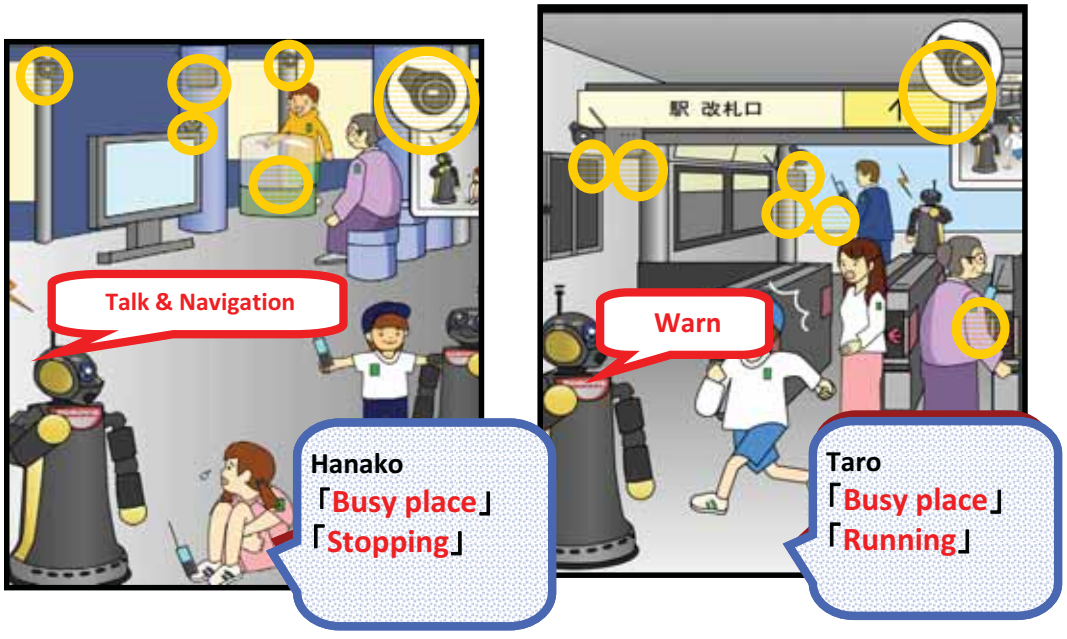
Requirements in Robotics (3)

Interaction with people require:

- Positioning **and** Identification **of people**
- **Robotic behaviors based on people position**
  - approach, eye contact, …

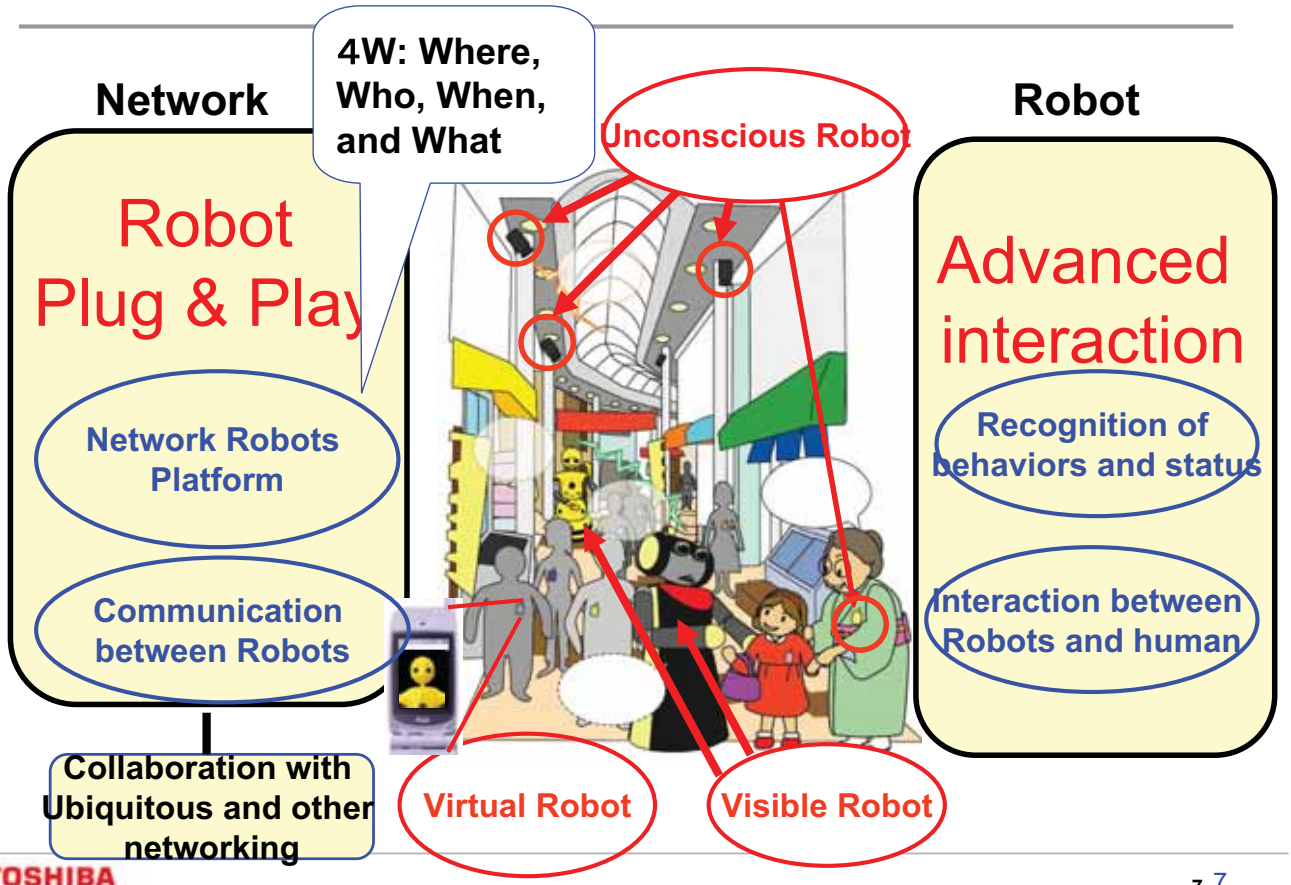


Structuring environmental information

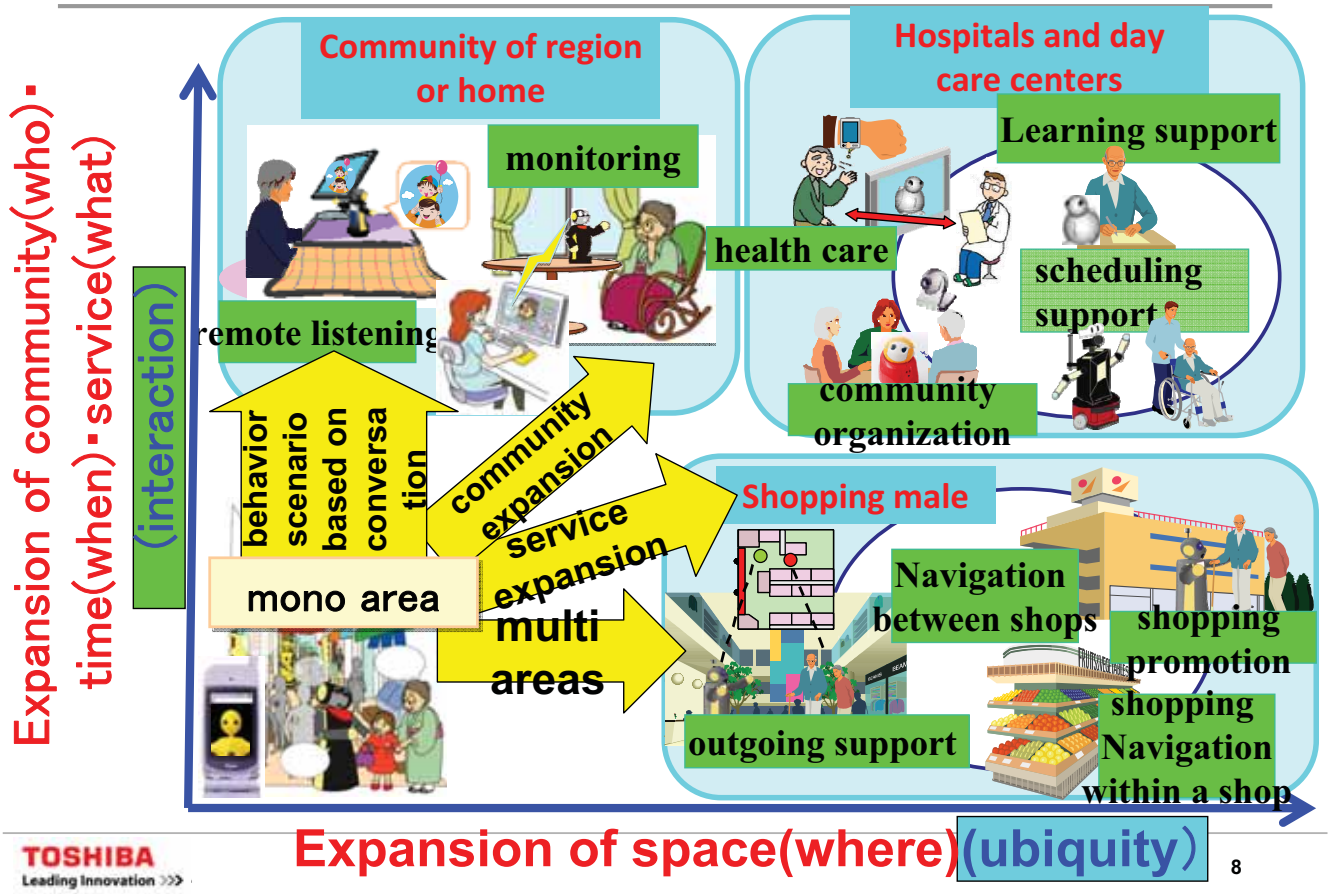


However, only positions are not enough

Network Robots 2004-2008

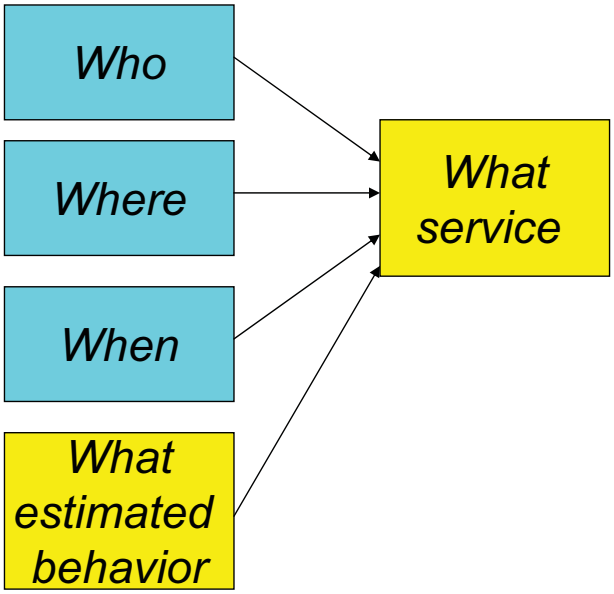


Ubiquitous Network Robot for elders（2009－2012）



4W and RoLo

- **4W: Where, Who, When, and What**
- **RoLo covers 3W(Where, Who, When)**
- **“What”?**



Behavior estimation by robots

- **Conventional life support items by robots probably are decided based on items realized by robots.**
- **Robots only estimate human behaviors which are necessary and robots can estimate.**
- **Behavior classification is not systematic.**

New trends of behavior estimation

- **For energy saving**

  The air conditioner with motion sensors estimates user's position and behaviors and controls its operation parameters.

  ex. Panasonic's AirRobo, Mitsubishi's Move Eye, and so on.

Eight sensors detect floor's temperature and user's location.

Sensors measure from side to side.

Photos of Mitsubishi's MoveEye cited from http://www.mitsubishielectric.co.jp/home/kirigamine/09/moveeyefit/

New trends of behavior estimation (continued)

- **For digital signage**

  The digital signage with a camera counts numbers, detects the face directions, estimates users' sexuality and age and change the displayed contents.

  ex. Oki's Signage Eye, NEC's eye flavor, and so on.

  Photo of NEC'x eye flavor cited from http://www.nec.co.jp/press/ja/0812/1601.html

- **For health care**

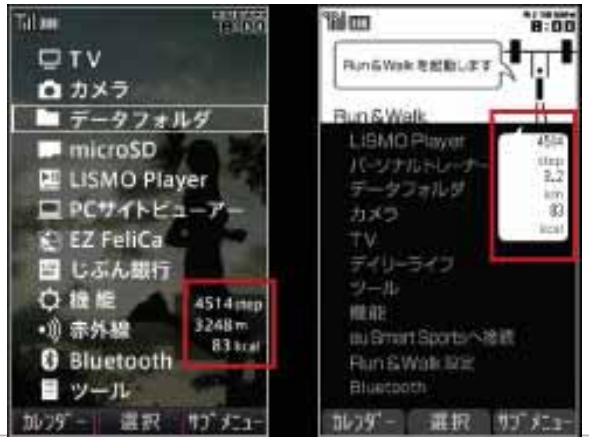
New trends of behavior estimation (continued)

- **For health care**

The mobile phone with a motion sensor measure walk count and calculates distances and calories-out.

ex. au's Run&Walk, docomo's health care, and so on.

Photo of W65T displays cited from http://www.toshiba.co.jp/product/etsg/cmt/au/w65t/w65t_menu.htm



New trends of behavior estimation (continued)

- **For recommendation**

ISP delivers the information based on locations and behavior histories.

ex. docomo's i-concier service, and so on.

Photo of docomo's i-concier cited from http://answer.nttdocomo.co.jp/concier/index.html

Examples of behavior classification

- **The details of behavior classification diverse.**

Compendium of physical activities: a update of activity codes and METs (Metabolic equivalents) intensities
METs are defined b ACSM (Amerikan College of Sports Medicine)

cited from Ainsworth BE, et.al., Sci Sports Exerc. 20000, 32(9 Suppl):S498-504.

5020	3.0	home activities	cleaning,heavy or major(e.g. wash car,wash windows,clean garage),vigorous effort
5021	3.5	home activities	mopping
5025	2.5	home activities	multiple household tasks all at onece,light effort
5026	3.5	home activities	multiple household tasks all at onece,moderate effort
5027	4.0	home activities	multiple household taskes all at once,vigorous effort
5030	3.0	home activities	cleaning,house or cabin,general
5040	2.5	home activities	cleaning,light(dusting,straighening up,changing linen,carrying out trash)
5041	2.3	home activities	wash dishes - standing or in general(not broken into stand/walk components)
5042	2.5	home activities	wash dishes;clearing dishes from table - walking
5043	3.5	home activities	vacuuming
5045	6.0	home activities	butchering animals
5050	2.0	home activities	cooking or food preparation - standing or sitting or in general(not broken into stand/walk components),manual appliances
5051	2.5	home activities	serving food,setting table - implied walking or standing

continued

5053	2.5	home activities	feeding animals
5055	2.5	home activities	putting away groceries(e.g. carrying groceries,shopping without a grocery cart),carrying packages
5058	7.5	home activities	carrying groceries upstairs
5057	3.0	home activities	cooking Indian bread on an outside stove
5060	2.3	home activities	food shopping with or without a grocery cart,standing or walking
5065	2.3	home activities	non-food shopping,standing or walking
5070	2.3	home activities	ironing
5080	1.5	home activities	sitting - knitting,sewing,lt.wrapping(presents)
5090	2.0	home activities	implied standing - laundry,fold or hang clothes,put clothes in washer or dryer,packing suitcase
5095	2.3	home activities	implied walking - putting away clothes to pack,putting away laundry

continued

5146	3.5	home activities	standing - packing/unpacking boxes,occasional lifting of household items light - moderate effort
5147	3.0	home activities	implied walking - putting away household items - moderate effort
5148	2.5	home activities	watering plants
5149	2.5	home activities	building a fire inside
5150	9.0	home activities	moving household items upstairs,carrying boxes or furniture
5160	2.0	home activities	standing - light(pump gas,change light bulb,etc.)
5165	3.0	home activities	walking - light,non-cleaning(readying to leave,shut/lock doors, close windows,etc.)
5170	2.5	home activities	sitting - playing with child(ren) - light,only active periods
5171	2.8	home activities	standing - playing with child(ren) - light,only active periods
5175	4.0	home activities	walk/run - playing with child(ren) - moderate,only active periods

continued

5138	1.5	home activities	reclining with baby
5130	2.5	home activities	sit,playing with animals,light,only active periods
5131	2.8	home activities	stand,playing with animals,light,only active periods
5132	2.8	home activities	walk/run,playing with animals,light,only active periods
5133	4.0	home activities	walk/run,playing with animals,moderate,only active periods
5134	5.0	home activities	walk/run,playing with animals,vigorous,only active periods
5135	3.5	home activities	standing - bathing dog
6010	3.0	home repair	airplane repair
0020	4.0	home repair	automobile body work

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continue

6090	4.5	home repair	caulking,except log cabin
6100	5.0	home repair	cleaning gutters
6110	5.0	home repair	excavating garage
0120	5.0	home repair	hanging storm windows
6130	4.5	home repair	laying or removing carpet
6140	4.5	home repair	laying tile or linoleum,repairing appliances
6150	5.0	home repair	painting,outside home(Taylor Code 650)
6160	3.0	home repair	painting,papering,plastering,scraping,inside house,hanging sh rock,remodelling
6155	4.5	home repair	painting,(Taylor Code 630)
6170	3.0	home repair	put on and removal of tarp - sailboat

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continued

6230	4.5	home repair	washing fence,painting fence
6240	3.0	home repair	wiring,plumbing
7010	1.0	inactivity,quiet	lying quietly and watching television
7011	1.0	inactivity,quiet	lying quietly,doing nothing,lying bed awake,lisiening to music(not talking or reading)
7020	1.0	inactivity,quiet	sitting quietly and watching television
7021	1.0	inactivity,quiet	sitting quietly,sitting smoking,lisiening to music(not talking or reading),watching a movie in a theater
7030	0.9	inactivity,quiet	sleeping
7040	1.2	inactivity,quiet	standing quietly(standing in a line)
7050	1.0	inactivity,quiet	reclining - writing
7060	1.0	inactivity,quiet	reclining - talking or talking on phone
7070	1.0	inactivity,quiet	reclining - reading
7075	1.0	inactivity,quiet	meditating

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Wii Fit

http://wii.com/jp/movies/wii-cm-soft208/

ICF: International Classification of Functioning, Disability and Health by WHO

- **body functions**
- **body structures**
- **impairments**
- **activity**
- **participation**
- **activity limitations**
- **participation restrictions**
- **environmental factors**

ICF first level (1/2)

- **body functions**
  1. **mental functions**
  2. **sensory functions and pain**
  3. **voice and speech functions**
  4. **functions of the cardiovascular, hematological, immunological and respiratory systems**
  5. **functions of the digestive, metabolic and endocrine systems**
  6. **genitourinary and reproductive functions**
  7. **neuromusculoskeletal and movement-related functions**
  8. **functions of the skin and related structures**
- **body structures**
  1. **structures of the nervous system**
  2. **the eye, ear and related structures**
  3. **structures involved invoice and speech**
  4. **structures of the cardiovascular, immunological and respiratory systems**
  5. **structures related to the digestive, metabolic and endocrine systems**
  6. **structures related to the genitourinary and reproductive systems**
  7. **structures related to movement**
  8. **skin and related structures**

ICF first level (2/2)

- **activities and participation**
  1. **learning and applying knowledge**
  2. **general tasks and demands**
  3. **communication**
  4. **mobility**
  5. **self-care**
  6. **domestic life**
  7. **interpersonal interactions and relationships**
  8. **major life area**
  9. **community, social and civic life**

- **environmental factors**
  1. **products and technology**
  2. **natural environment and human-made changes to environment**
  3. **support and relationships**
  4. **Attitudes**
  5. **services, systems and policies**

Activities and participation (1/5)

1. learning and applying knowledge

purposeful sensory experiences（d110-d129）
- d110 watching
- d115 listening
- d120 other purposeful sensing
- d129 purposeful sensory experiences, other specified and unspecified

basic learning（d130-d159）
- d130 copying
- d135 rehearsing
- d140 learning to read
- d145 learning to write
- d150 learning to calculate
- d155 acquiring skills
- d159 basic learning, other specified and unspecified

applying knowledge（d160-d179）
- d160 focusing attention
- d163 thinking
- d166 reading
- d170 writing
- d172 calculating
- d175 solving problems
- d177 making decisions
- d179 applying knowledge, other specified and unspecified
- d198 learning and applying knowledge, other specified
- d199 learning and applying knowledge, unspecified

2. general tasks and demands

- d210 undertaking a single task
- d220 undertaking multiple tasks
- d230 carrying out daily routine
- d240 handling stress and other psychological demands
- d298 general tasks and demands, other specified
- d299 general tasks and demands, unspecified

Activities and participation (2/5)

3. communication

communicating-receiving（d310-d329）
- d310 communicating with-receiving-spoken messages
- d315 communicating with-receiving-nonverbal messages
- d320 communicating with-receiving-formal sign language messages
- d325 communicating with-receiving-written messages
- d329 communicating-receiving, other specified and unspecified

communicating-producing（d330-d349）
- d330 speaking
- d335 producing nonverbal messages
- d340 producing messages in formal sign language
- d345 writing messages
- d349 communication-producing, other specified and unspecified

conversation and use of communication devices and techniques（d350-d369）
- d350 conversation
- d355 discussion
- d360 using communication devices and techniques
- d369 conversation and use of communication devices and techniques, other specified and unspecified
- d398 communication, other specified
- d399 communication, unspecified

Activities and participation (3/5)

4. mobility

changing and maintaining body position（d410-d429）
- d410 basic body position
- d415 maintaining a body position
- d420 transferring oneself
- d429 changing and maintaining body position, other specified and unspecified

carrying, moving and handling objects（d430-d449）
- d430 lifting and carrying objects
- d435 moving objects with lower extremities
- d440 fine hand use
- d445 hand and arm use
- d449 carrying, moving and handling objects, other specified and unspecified

walking and moving（d450-d469）
- d450 walking
- d455 moving around
- d460 moving around in different locations
- d465 moving around using equipment
- d469 walking and moving, other specified and unspecified

moving around using transportation（d470-d489）
- d470 using transportation
- d475 driving
- d480 riding animals for transportation
- d489 moving around using transportation, other specified and unspecified
- d498 mobility, other specified
- d499 mobility, unspecified

Activities and participation (4/5)

5. self-care

d510 washing oneself
d520 caring for body parts
d530 toileting
d540 dressing
d550 eating
d560 drinking
d570 looking after one's health
d598 self-care, other specified
d599 self-care, unspecified

6. domestic life

acquisition of necessities（d610-d629）
d610 acquiring a place to live
d620 acquisition of goods and services
d629 acquisition of necessities, other specified and unspecified
household tasks（d630-d649）
d630 preparing meals
d640 doing housework
d649 household tasks, other specified and unspecified
caring for household objects and assisting others（d650-d669）
d650 caring for household objects
d660 assisting others
d669 caring for household objects and assisting others, other specified and unspecified
d698 domestic life, other specified
d699 domestic life, unspecified

Activities and participation (5/5)

7. interpersonal interactions and relationships

general interpersonal interactions（d710-d729）
d710 basic interpersonal interactions
d720 complex interpersonal interactions
d729 general interpersonal interactions, other specified and unspecified
particular interpersonal relationships（d730-d779）
d730 relating with strangers
d740 formal relationships
d750 informal social relationships
d760
family relationships
d770 intimate relationships
d779 particular interpersonal relationships, other specified and unspecified
d798 interpersonal interactions and relationships, other specified
d799 interpersonal interactions and relationships, unspecified

8. major life areas

education（d810-d839）
d810 informal education
d815 preschool education
d820 school education
d825 vocational training
d830 higher education
d839 education, other specified and unspecified work and employm
d840 apprenticeship (work preparation)
d845 acquiring, keeping and terminating a job
d850 remunerative employment
d855 non-remunerative employment
d859 work and employment, other specified and unspecified
economic life（d860-d879）
d860 basic economic transactions
d865 complex economic transactions
d870 economic self-sufficiency
d879 economic life, other specified and unspecified
d898 major life areas, other specified
d899 major life areas, unspecified

9. community, social and civic life

d910 community life
d920 recreation and leisure
d930 religion and spirituality
d940 human rights
d950 political life and citizenship
d998 community, social and civic life, other specified
d999 ommunity, social and civic life, unspecified

Behaviors classified by Mitsubishi Heavy Industry

Behaviors	Principle actions				
	location	pass	attitude	hand position	face direction
Module1: 5 behaviors ・Still ・Walk slowly ・Walk ・Stop ・Start	—	stillness low speed high speed move and stop stop and move	—	—	—
Module2: 7 behaviors ・Go back and forth ・Move forth or back ・come lose or become remote ・walk zigzag ・come back	wide area plural areas wide area area	Move long distance into area into area oscillate go out and back	—	—	—

Behaviors classified by MHI (continued)

Behaviors	Principle actions				
	location	pass	attitude	hand position	face direction
Module3: 13 behaviors ・Into, out, stay in area ・Stay in area over a certain period ・Look at a direction board ・Stay at a direction board long time ・Wait and see at the front of a shop ・Stay at a vendor machine long time ・Stay at a showpiece long time	within area within area in front of a direction board Id. in front of a shop in front of a vendor machine In front of a showpiece	move still over a certain period Id. Id. Id. still or move long time Id.		—	— — to a direction board arbitrary to a shop to a vendor machine downward

Behaviors classified by MHI (continued)

Behaviors	Principle actions				
	location	Pass	attitude	hand position	face direction
・Roam in front of showpieces ・Look at TV ・Wait in a sitting position ・Be in sitting on the floor in front of a shop	In front of showpieces In front of TV In a waiting room In front of a shop	back-and-forth still Still still long time	sitting on a chair sitting on a floor	—	downward to TV —
Module 4: 6 behaviors ・Be in standing ・Be in sitting on a chair ・Be in sitting on the floor ・Sit on a chair ・Sit on the floor ・Stand up	—	still	standing sitting on a chair sitting on the floor stand and sit on stand and sit on sit on and stand	—	—

Behaviors classified by MHI (continued)

Behaviors	Principle actions				
	location	Pass	attitude	hand position	face direction
Module 5 : 15 behaviors ・Both hands (up, side , down) ・Both hands (upward, downward) ・Right hand (up, side , down) ・ Left hand (up, side , down) ・Right hand (upward, downward) ・ Left hand (upward, downward)	—	still	—	position of both hands change of both hands position position of right hand position ofl eft hand change of right hand position change of right hand positon	front

Behaviors classified by MHI (continued)

Behaviors	Principle actions				
	location	Pass	attitude	hand position	face direction
Module 6 : 4 behaviors ・Eating ・Drinking ・Reading ・ Writing	—	still	sitting	hand motion according to each behaviors (time series data of position changing)	—

Assignments

- **Investigate and reorganize several behavior classifications to meet the requests from Robots, energy saving, digital signage, health care, recommendation, and so on.**
- **Discuss relations between RoLo architecture and the behavior classifications.**

This research was supported by Ministry of
Internal Affairs and Communications

Robotics Domain Task Force Preliminary Agenda ver0.0.1 **robotics/2009-06-03**

OMG Technical Meeting - San Antonio, TX, USA -- Sept. 14-18, 2009

http://robotics.omg.org/

		TF/SIG				
		Host	Joint (Invited)	Agenda Item	Purpose	Room
Monday: WG activites(pm)						
12:00	13:00					
13:00	18:00			Architecture Board Plenary		
13:00	13:45			Robotics Steering Committee	Arrangement	
14:00	18:00			Robotic Infrastructure WG (4h) - Noriaki Ando(AIST) and Beom-Su Seo (ETRI)	discussion	
				Services WG(4h): User Identification Service RFP Meeting - Su-Young Chi (ETRI), and Toshio Hori (AIST)	discussion	
Tuesday: WG activities and Robotics Plenary						
9:00	12:00			Robotic UML Profiling Meeting (3h) - Laurent Rioux (Thales)	discussion	
				Services WG(3h): User Identification Service RFP Meeting - Su-Young Chi and Toshio Hori	discussion	
12:00	13:00	**LUNCH**				
13:00	13:15	Robotics		Robotics-DTF Plenary Opening Session	Robotics plenary openning	
13:15	14:00	Robotics		**Special Talk: <Call for Presentation>** **- TBA**	presentation and discussion	
14:00	14:45	Robotics		**Special Talk: <Call for Presentation>** - **TBA**	presentation and discussion	
				Break (30min)		
15:15	16:30	Robotics		WG Reports and Discussion (Service WG, Infrastructure WG, Profiling Meeting)	presentation and discussion	
16:30	17:00	Robotics		Contact Reports: - Makoto Mizukawa(Shibaura-IT), and Young-Jo Cho(ETRI)	Information Exchange	
17:00	17:15	Robotics		Robotics-DTF Plenary Wrap-up Session (Roadmap and Next meeting Agenda)	Robotics plenary wrap-up	
17:15				Adjourn plenary meeting		
17:30	17:45			Robotics WG Co-chairs Planning Session (Preliminary Agenda for next TM, Draft report for Friday'	planning for next meeting	
Wednesday WG activity follow-up						
9:00	12:00			Services WG(3h): User Identification Service RFP Meeting - Su-Young Chi, Hyunsoo Kim, and Toshio Hori	discussion	
12:00	14:00	**LUNCH and OMG Plenary**				
14:00	18:00			Services WG(4h): User Identification Service RFP Meeting - Su-Young Chi, Hyunsoo Kim, and Toshio Hori	discussion	
18:00	20:00	**OMG Reception**				
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8:30	12:00			AB, DTC, PTC		
12:00	13:00	**LUNCH**				

Other Meetings of Interest

Monday						
8:00	8:45	OMG		New Attendee Orientation		
18:00	19:00	OMG		New Attendee Reception (by invitation only)		

Please get the up-to-date version from http://staff.aist.go.jp/t.kotoku/omg/RoboticsAgenda.pdf

robotics/2009-06-04

Robotics-DTF

Date: Friday, 26th June, 2009
Chair: T. Kotoku, L. Rioux, and Y. –J. Cho
URL: http://robotics.omg.org/
email: robotics@omg.org

➢Highlights from this Meeting:

Robotics Plenary: (6 participants)

- –1 Special Talk
  - Behavior Classification for Lifestyle Support Service (Miwako Doi) [robotics/2009-06-02]
- –Preliminary agenda for upcoming meeting [robotics/2009-06-03]

Robotics-DTF

Date: Friday, 26th June, 2009
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➢Deliverables from this Meeting:

- –Nothing Special

➢Future deliverables (In-Process):

- –Robotic User Identification Service RFP
- –Potential RFP of Robot Technology Component(RTC) Container

➢Next Meeting (San Antonio, TX, USA):

- –Review of User Identification Service RFP
- –Guest presentations
- –Roadmap discussion
- –Contact reports

Minutes of the Robotics DTF Plenary Meeting -DRAFT-

June 22-26, 2009
Real InterContinental Hotel & Club Tower
San Jose, Costa Rica
(robotics/2009-06-05)

Minutes Highlights

1) **Because the swine flu continues to spread all over the world, most of our volunteers are NOT able to come to the meeting.**
2) **We decided all the process of WG activities bring forward to the San Antonio meeting in September.**
3) **We have one Special talk of Dr. Miwako Doi (Toshiba).**

List of Generated Documents

robotics/2009-06-01 Final Agenda (Tetsuo Kotoku)
robotics/2009-06-02 Behavior Classification for Lifestyle Support Service (Miwako Doi)
robotics/2009-06-03 Next Meeting Preliminary Agenda - DRAFT (Tetsuo Kotoku)
robotics/2009-06-04 DTC Report Presentation (Tetsuo Kotoku)
robotics/2009-06-05 Cosata Rica Meeting Minutes - DRAFT (Tetsuo Kotoku)

MINUTES
Wednesday, June 24, 2009, Jacaranda 2

Robotics DTF Plenary Meeting, Chair: Dr. Kotoku, Quorum: 4
Joined organizations: AIST, JARA, Thales, Toyo Univ., Univ. of Tsukuba
13:00 – 13:40 Special talk: Behavior Classification for Lifestyle Support Service,
Dr. Miwako Doi, Toshiba

- Brief introduction of the Network Robot Project in Japan
- Robotic Localization Service (RLS) specification supports “Who”, “Where”, and “When” data as a uniform manner.
- We need “What” data ,“the context” for the robot-human interaction
- New trends of behavior estimation in industry
- Some examples of behavior classification
- Proposal for new behavior classification for the service robots
- Discussion of the ontology technology, the RoLo Architecture and the behavior classification

13:40-14:15 Free Discussion

- Brief introduction of robotic projects in Europe.
- Shuichi proposed to organize a workshop for the outreach activity.
- Next meeting: Sept. 14-18, 2009 at San Antonio

Adjourned plenary meeting at 14:15

Attendee: 6 Participants

- Kenji Hirata (Toyo Univ.)
- Laurent Rioux (Thales)
- Miwako Doi (Toshiba)
- Shuichi Nishio (JARA/ATR)
- Takashi Tubouchi (Univ. of Tsukuba)
- Tetsuo Kotoku (AIST)

Prepared and submitted by Tetsuo Kotoku (AIST).