

Title	Minutes of the X2S TC meetings in Vancouver
Date	6-10 May 2002
Author	Fabio Bellifemine (TILAB)

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1 Brief introduction

- X2S (eXperimental to Standard) TC (Technical Committee) established in Lausanne, Feb 2002
- Mandate: identify, and promote to Standard status a core set of FIPA specifications
- Milestone: end of 2002 – final vote of the FIPA members
- Chairman: Fabio Bellifemine (TILAB)
 - o co-chairs: Jonathan Dale (Fujitsu Labs of America), Steven Willmott (EPFL)
- Process:
 - o Consider all of the FIPA specifications that at 31st March, 2002 are at Experimental status
 - o The FAB gives the control of the source of the latest versions of the Experimental specifications to TC X2Standard.
 - o TC X2Standard will analyse and make the necessary modifications using the Track Changes feature of Word switched on and using the ChangeLog annex at the end of each specification to note major changes only.
 - o At the end of each meeting, and after any substantial interim revision, TC X2Standard will make available to the FIPA members the updated documents by publishing them in a FIPA members-only repository, and notifying the membership through the chat mailing list.
 - o After each meeting, TC X2Standard will submit a report of the current set of proposed solutions to outstanding problems, and the current list of unresolved issues to the membership. Closure of this list is required by the Friday of the meeting prior to meeting at which the modified specifications will be submitted to the FAB and Membership.
 - o At the end of the work plan, TC X2Standard will submit all of the modified specifications to the FAB which will expedite the approval process and the final vote.
 - o In order to have a consistent and usable core of specifications eventually approved to Standard status, it is necessary that the final FIPA membership vote is organized as a per-group of documents basis rather than as a per-document basis to give the complete vision of this coherent set of FIPA specifications.
- e-mail reflector: x2s@fipa.org
- template for providing contributions
 - o on-line form at http://www.fipa.org/html/x2s_template.html

- off-line, just send an e-mail with the following [info](#)

2 List of specifications that were in X status at 31/3/02

Identifier	Title
XC00001	FIPA Abstract Architecture Specification
XC00007	FIPA Content Languages Specification
XC00008	FIPA SL Content Language Specification
XC00009	FIPA CCL Content Language Specification
XC00010	FIPA KIF Content Language Specification
XC00011	FIPA RDF Content Language Specification
XC00014	FIPA Nomadic Application Support Specification
XC00023	FIPA Agent Management Specification
XC00025	FIPA Interaction Protocol Library Specification
XC00026	FIPA Request Interaction Protocol Specification
XC00027	FIPA Query Interaction Protocol Specification
XC00028	FIPA Request When Interaction Protocol Specification
XC00029	FIPA Contract Net Interaction Protocol Specification
XC00030	FIPA Iterated Contract Net Interaction Protocol Specification
XC00031	FIPA English Auction Interaction Protocol Specification
XC00032	FIPA Dutch Auction Interaction Protocol Specification
XC00033	FIPA Brokering Interaction Protocol Specification
XC00034	FIPA Recruiting Interaction Protocol Specification
XC00036	FIPA Propose Interaction Protocol Specification
XC00037	FIPA Communicative Act Library Specification
XC00061	FIPA ACL Message Structure Specification
XC00067	FIPA Agent Message Transport Service Specification
XC00069	FIPA ACL Message Representation in Bit-Efficient Specification
XC00070	FIPA ACL Message Representation in String Specification
XC00071	FIPA ACL Message Representation in XML Specification
XC00075	FIPA Agent Message Transport Protocol for IOP Specification
XC00076	FIPA Agent Message Transport Protocol for WAP Specification
XC00079	FIPA Agent Software Integration Specification
XC00080	FIPA Personal Travel Assistance Specification
XC00081	FIPA Audio-Visual Entertainment and Broadcasting Specification
XC00082	FIPA Network Management and Provisioning Specification
XC00083	FIPA Personal Assistant Specification
XC00084	FIPA Agent Message Transport Protocol for HTTP Specification
XC00085	FIPA Agent Message Transport Envelope Representation in XML Specification

XC00086	FIPA Ontology Service Specification
XC00088	FIPA Agent Message Transport Envelope Representation in Bit Efficient Specification
XC00091	FIPA Device Ontology Specification
XC00092	FIPA Message Buffering Service Specification
XC00093	FIPA Messaging Interoperability Service Specification

3 Specific input received for/during this meeting

Input 1-11 received before the meeting

Input 12-... received during the meeting

id	Spec name	Spec no.	Contact Point	Date	Note (see also minutes of the discussions)
1	AA Convergence		Dominic, Steve	06/03/2002	approved
2	MTS	67	Fabio Bellifemine	05/04/2002	approved
3	Contract-net IP	29	Gabriel Hopmans	05/04/2002	approved
4	Agent Management	23	Ravi Prakash	05/04/2002	approved
5	ACL Message Structure	61	Fabio Bellifemine	18/04/2002	partly approved
6	IP and AUML		Ravi Prakash	25/04/2002	(sent to chat)
7	Agent Management	23	David Levine	22/04/2002	(via automatic form) approved
8	Agent Management	23	David Levine	22/04/2002	(via automatic form) approved
9	reply to previous comments		Steven Willmott	3/4/2002	approved
10.1	Agent Management	23			(sent to FAB)
10.2	XML ACL Codec	71			discussed
10.3	XML Envelope	84			discussed
10.4	HTTP MTP	54	Ion Constantinescu	21/1/2002	need more discussion
11.1	case-sensitiveness				(pending from bakeoff
11.2	apDescription				input)
11.3	IPs & timeout handling	several	Fabio Bellifemine	5/4/2001	partly approved
other input welcome during this meeting					
12	Agent Management	23	Fabio Bellifemine	6/5/2002	partly approved
13	Agent Management. DF lease-time	23	Jonathan Dale	6/5/2002	To be further discussed in Helsinki.
14	Agent Management (DF Federation)	23	Jonathan Dale	7/5/2002	To be further discussed in Helsinki
15	Agent Management (quit)	23	Fabio Bellifemine	7/5/2002	approved
16	Agent Management (DF Federation)	23	Misty Nodine	7/5/2002	To be further discussed in Helsinki
17	Fipa-subscribe		Misty Nodine	7/5/2002	New spec.
18	Fipa-request		Fabio Bellifemine	7/5/2002	partly approved
19	All IPs – not-understood		Misty, Jon	7/5/2002	approved
20	ACLMessage		Fabio Bellifemine	8/5/2002	approved
21	All – examples		Heikki Helin	8/5/2002	approved
22	ACL – not-understood	37	Misty Nodine	8/5/2002	approved
23	ACL	37	Makoto Okada	8/5/2002	approved

24	ACL	37	Fabio Bellifemine	8/5/2002	approved
25	Agent Management	23	Monique Calisti	8/5/2002	approved
26	SL	8	Fabio Bellifemine	9/5/2002	partly approved
27	Device Ontology	91	Heikki Helin	10/5/2002	approved
28	Message Buffering Service	92	Heikki Helin	10/5/2002	approved
29	Message Interoperability Service	93	Heikki Helin	10/5/2002	approved
30	Nomadic Application Support	14	Heikki Helin	10/5/2002	approved
31	WAP MTP	76	Heikki Helin	10/5/2002	approved
32	Bit Efficient ACLCodec	69	Heikki Helin	10/5/2002	approved
33	Bit Efficient Envelope	88	Heikki Helin	10/5/2002	approved

4 X2S Agenda for this week

- Monday 14:00 – 18:00
 - o AA convergence
 - o MTS, Agent Management, MTPs,
- Tuesday 9:00 – 12:30
 - o MTS, Agent Management, MTPs (cont.)
- Tuesday 14:00 – 18:00
 - o Interaction Protocols and AUML
 - o Agent Management
- Wednesday 9:00 – 12:30
 - o ACL Message Structure
 - o ACL
 - o ACL Codecs
- Thursday 14:00 – 18:00
 - o SL and other content languages
- Friday 9:00 – 12:30
 - o Wireless TC: Nomadic, Message Buffering

5 List of participants

Name	Company	Ma	Tm	Ta	Wm	Ta	Fm
Fabio Bellifemine	TILAB	x	x	x	x	x	x
Misty Nodine	Telcordia	x		x	x (IP)		
Mike Kerstetter	Boeing	x		x			
Ray Staron	Rockwell Automation	x					
Patricia Charlton	Motorola	x					
Jonathan Dale	Fujitsu	x	x	x			
Hafiz Farooq Ahmad	Comtec	x	x	x	x	x	

Hiroki Suguri	Comtec	x	x	x			
Munchurl Kim	Information and Communications University, Korea	x	x	x		x	
David Levine	IBM	x		x		x	
Bernard Burg	HP	x	x	x			x
Kogure	NTT			x			
Makoto Okada	Fujitsu				x		
Monique Calisti	WhiteStein				x		
Jim Odell	James Odell Associates			x (IP)	x (IP)		x
Heikki Helin	Sonera				x		x
Heimo Laamanen	Sonera						x
Michael Berger	Siemens						x

M,T,W,T,F = day of the week

a,m = afternoon, morning

IP = Interaction Protocol discussion

6 Discussion

Monday afternoon

no. 1. AA Convergence, Dominic et al.

2.1	Agent Definition	approved the following: “An agent is a computational process that implements the autonomous, communicating functionality of an application. Agents communicate using an Agent Communication Language . An Agent is the fundamental actor on an AP which combines one or more service capabilities, as published in a service description, into a unified and integrated execution model. An agent must have at least one owner, for example, based on organisational affiliation or human user ownership, and an agent must support at least one notion of identity. This notion of identity is the Agent Identifier (AID) that labels an agent so that it may be distinguished unambiguously within the Agent Universe. An agent may be registered at a number of transport addresses at which it can be contacted.”
2.2	Service Components /	partly accepted: add a footnote in 00023 ‘The functionalities of these components are a specialization of the AA notion of service (see FIPA00001)’. replace ‘component’ with ‘logical component’
2.3.1	Service	accepted

	Directory Service	
2.3.2	Service Root	accepted
2.3.3	Additional Discussion	accepted
2.4	Message Structure	accepted but only in the MTS, MTP, Agent Management specs. No change must be done in the ACL specs
2.5	Agent Directory Service	accepted excepted one issue: ‘Note that the AA Locator maps to both “address” and “resolver” F2000 attributes’ change to ‘Note that the “addresses” F2000 attribute, together with the name resolution mechanism, is a reification of the notion of AA Locator’
2.6	Identity	approved
2.7	Signature Type and Service Signature	approved

2.1 Discussion on Agent Definition

AA: An **agent** is a computational process that implements the autonomous, communicating functionality of an application. Typically, agents communicate using an **Agent Communication Language**. A concrete instantiation of **agent** is a mandatory element of every concrete instantiation of the abstract architecture.

Agent Management: An **Agent** is the fundamental actor on an AP which combines one or more service capabilities into a unified and integrated execution model that may include access to external software, human users and communications facilities. An agent may have certain resource brokering capabilities for accessing software (see [FIPA00079]).

An agent must have at least one owner, for example, based on organisational affiliation or human user ownership, and an agent may support several notions of identity. An Agent Identifier (AID) labels an agent so that it may be distinguished unambiguously within the Agent Universe. An agent may be registered at a number of transport addresses at which it can be contacted and it may have certain resource brokering capabilities for accessing software.

New definition in the Agent Management: (Approved)

An **agent** is a computational process that implements the autonomous, communicating functionality of an application. Agents communicate using an **Agent Communication Language**. An **Agent** is the fundamental actor on an AP which combines one or more service capabilities, as published in a service description, into a unified and integrated execution model.

An agent must have at least one owner, for example, based on organisational affiliation or human user ownership, and an agent must support at least one notion of identity. This notion of identity is the Agent Identifier (AID) that labels an agent so that it may be distinguished unambiguously within the Agent Universe. An agent may be registered at a number of transport addresses at which it can be contacted.

no. 7, Agent Management. mobility, David Levine

Add a sentence in section 5.1 ‘Agent Life Cycle’:

“This section describes a possible life-cycle that we use to describe the states which we believe are necessary and the responsibilities of the AMS in these states.”

Remove any reference to [FIPA0005] but keep references to agent mobility.

Remove the ‘mobility’ slot of the APDescription.

Remove the ‘dynamic’ slot of the APDescription and all obsolete language referring to dynamic registration.

no. 8, Agent Management. MTS, David Levine

approved

no. 4, Agent Management, Ravi Prakash

no. 1 – approved

no. 2 – approved

no. 3 – approved as follows:

line 647--648:

"These exceptions are represented as propositions that evaluate to true under the exceptional circumstances. This section describes the standard set of predicates (defined over a set of arguments) and propositional symbols in the domain of discourse of the FIPA-Agent-Management ontology."

no. 4 – approved

no. 10.1 Ion Constantinescu, Agent Management

approved

no. 12, Fabio, Agent Management

1. DF should become optional component of the platform (but normative behaviour as defined by FIPA). YES if TC ad-hoc requires that. Other scenarios where it could be optional if when there is a-priori known interaction.

2. remove ‘.’ from the name of the parameters. Infact it is not part of the name, it is the SLEncoder that adds that according to the grammar rules.

3. ambiguity in ‘hap’ when used for the default AIDs of DF and AMS. Decision approved: replace ‘hap’ with ‘hap_name’ + add the following footnote “*hap_name must be replaced with the name of the Home Agent Platform as published in the APDescription*”

no. 13, Jonathan Dale, Agent Management

1. DF and lease-time. Proposal:

- a. add a lease time parameter in relative time (semantics is starting from when the message is received by the DF) as a new slot of the DFAgentDescription.

- b. DF-REsponse can use a new predicate as for the content of the AGREE (lease-time DFAgentDescription hours (a floating number)). The DF can also REFUSE if the lease-time is too short or too long and in such a case the DF will use a predicate that specifies its minimum and maximum allowed lease-time (df-lease-time minimum maximum)
- c. Renewal of the registration: requesting a modify action
- d. The result of a search must return the updated lease time at the time of the search (i.e. not the original registered lease time)
- e. Jonathan will look at how other technologies (Jini, DHCP) implement that and will report at the next meeting. The decision is postponed after the report of Jonathan

2.

Tuesday morning

no. 2, MTS, Fabio

approved except for

- acl-representation, encrypted, payload-encoding. Add a sentence that says ‘the final recipient is required to process the envelope in order to use the message body’
- encrypted parameter. To be checked with Security WG.

no. 10.2, XML ACLCodec, Ion

approved.

Furthermore, the parameters *receiver* and *reply-to* must have as value a set of agent-identifiers, like this:

```
<!ELEMENT receiver (agent-identifier+)>
<!ELEMENT reply-to (agent-identifier+)>
```

no. 10.3, XML Envelope, Ion

not clear. Please clarify.

The following modifications have been approved to XML Envelope (doc. no. 85):

- add user-defined parameters both in agent-identifier, in received-object, and in envelope
- received-by, received-from should become URL and not CDATA
- check consistence between the definitions of the 2 DTDs in 71 (XML ACL) and 85 (XML Envelope)

no. 10.3, HTTP MTP, Ion

* Not clear enough specification of the HTTP message structure in respect to HTTP headers and the MIME encoding of the envelope. We propose:

- o Add a clear statement of the character sequence that is part of the MIME boundary and of the sequence that is part of the message

content. **CLARIFY BY PROPOSING THE CONCRETE CHANGES.**

o Add a clear statement that HTTP message headers should always immediately follow after the request/response line. **ISN'T THAT ALREADY PART OF THE IETF SPECIFICATIONS?**

* There are no provisions in the protocol in what concerns firewalls. We propose:

o To recommend a well-known port for FIPA HTTP agent communication (to reduce need for arbitrary outgoing connections). **NOT NECESSARY**

o To start an initiative for support of unidirectional HTTP MTP protocol. Currently a platform supporting the HTTP MTP requires both outgoing and incoming TCP connections. The later is often blocked by firewall settings. A communication mechanism based only on outgoing connections may provide a solution to this problem. **CORRECT BUT DOES IT HAVE AN IMPLICATION ON THE SPECIFICATION OR IT IS JUST AN IMPLEMENTATION ISSUE?**

Other comments from X2S:

- replace reference RFC822 with RFC2822
- remove lines 110-137 that describe how the MIME boundary is expressed. Just refer to the proper MIME or HTTP specifications
- move section 2.4 in an Annex "Guidelines for developers". Maybe also several other sections and paragraphs can go to this annex.
- line 85: shouldn't the host just be a URI?

The overall impression of X2S is that these specs should be reduced to 1 – 2 pages only and they should just refer to existing specifications, MIME, HTTP.

no. 16 DF Federation, Misty

Problem: avoid loops and limit propagation in the graph of federated DFs

Proposal coming out of the discussion in the meeting:

- replace df-search-results with max-results (typos at page 6, line 260)
- require that each DF that propagates a search action decrease by 1 the value of max-depth
- specify default values for max-depth (0), max-results (1), when not specified
- add a search-id slot in the SearchConstraints Frame and requires that each DF that propagates a search action does propagate the search-id and does not change the value of search-id

Decision: keep open this issue until next meeting.

no. 15, Quit Action in the Fipa-Agent-Management Ontology

Delete this action.

Tuesday afternoon

no. 3, Contract-net IP (spec no. 29), Gabriel

partly approved as follows:

- If this commitment, which is an attempt to perform an action, fails the contractor responds with the **failure** act. Once the contractor has completed the task (action has been done), it sends a completion message to the manager (**INFORM-DONE**).
- Replace inform-ref act with inform-result, because inform-ref is also the name of a communicative act and can be confusing. Explain that inform-done means INFORM that the action has been done, while inform-result means INFORM that the action has been done and the results of performing that action.
- Make that consistent in all the IPs and leave only INFORM-DONE and INFORM-RESULT by describing what they mean.

no. 6, IP and AUML, Ravi

Jim Odell takes as an action point to clarify what the asterisk means and if the names of the arcs represent or not the name of the communicative-act. (by end of May)

no. 11.3, IP & timeout handling, Fabio

- all ACLMessages in an Interaction Protocol should have a non-null conversation-id
- all responses to that message in the scope of that IP should have the same conversation-id value
- mandate to use unique values, within the scope of the sender agent, for this conversation-id
- add new parameter to the ACLMessage structure to specify a deadline for a conversation.
 - o conversation-expiration-time endofMay
- add a new parameter to the ACLMessage structure:
 - o conversation-sequence-no 1
 in order to specify an order for the sent messages (sequence-no is a progressive number within the scope of the sender and one for each conversation, what happens with multiple receivers?)

no. 17 subscribe IP, Misty

there are several use-cases when there is a need for such an IP

no. 18 fipa-request IP, Fabio

make AGREE optional because in some cases the time that elapses between the AGREE and the INFORM is so small that there is no need for sending 2 messages.

Do the same for all the IPs (i.e. fipa-proxy, fipa-query, ...)

Implication: if an agent receives INFORM then it can also infer that the sender also agreed.

TO CHECK THAT THE STRUCTURE OF THE IPs 26,27,33,34,36 is always the same (i.e. the initiator sends the c.a. and the responder sends REFUSE or AGREE – optional- and finally sends back the inform-done or inform-result or failure)

no. 19, not-understood, Misty, Jim

remove the not-understood arcs from all the IPs and add a policy in the IPLibrary document as follows: “If a party, at any stage within the scope of an interaction protocol, replies with a not-understood communicative act, then the protocol must be considered terminated with a failure condition and both parties can rollback to the state before the protocol started”

Wednesday morning

no. 5 , ACLMessage Structure,Fabio

partly approved.

conversation-id must be globally unique

no. 20 ACLMessage Structure, Fabio

remove section 3 and move it into a general FIPA document with guidelines on maintenance. approved.

no. 11.1, Case Sensitiveness, Bakeoff

proposal: make ACLCodecs and SLCodec case-insensitive.

There are 2 alternatives:

- require that words are case-insensitive while strings are case-sensitive (for all the codecs)
- review all the specs and put all the symbols defined by FIPA in lower case

Not necessarily these 2 alternatives are exclusive.

SLCoded and StringACLCodec: require that words are case-insensitive while strings are case-sensitive. APPROVED.

no. 21, Examples. Heikki Helin

All the content of the examples must be enclosed between quotes. APPROVED.

Check ACL specs, SL specs, ... al the specs basically.

no. 22 Not-understood ambiguity, Misty

The sender received a communicative act that it did not understand.

“The sender of the not-understood c.a. received ...”

APPROVED.

no. 23, ACL Specs, Makoto

Remove section 2.1,2.2,2.3 that describes the maintenance criteria and move into a general FIPA maintenance document. APPROVED

no. 24, ACLSpecs, clarification, Fabio.

Proposal: Add a note:

“As explained in section 5.5, communicative acts can be directly performed, can be planned by an agent, and can be requested of one agent by another. Macro acts can be planned and requested, but not directly performed.” Add this sentence for each macro-act.

Notice that this sentence is already written on line 614-616 but repeating is better.

APPROVED.

no. 25 Agent Management, Monique

fipa-df and fipa-ams are reserved values but they have not been clearly specified

Thursday afternoon

no. 26, SL, Fabio

1. remove lines 69-72 because they are redundant. APPROVED
2. remove lisp-like operators and symbols. If they are needed in a specific domain, then the domain should use a LISP-ontology to do that. APPROVED
3. remove ambiguity in expressing the functional term. APPROVED
4. check and correct the examples
5. it is necessary a way to represent relative time both in SL and in ACLStringEncoding. (Very simple proposal: just add an optional sign before the DateTimeToken). APPROVED
6. escaping mechanism. It is specified but not described. APPROVED
7. case-sensitive or not? A proposal is to have “Word” token case-insensitive while “StringLiteral” tokens case-sensitive. Is that reasonable or it just adds extra complexity? **KEEP ISSUE OPEN UNTIL HELSINKI TO ALLOW PEOPLE TO MAKE PROPOSAL**
8. Add ByteLengthEncodedString. APPROVED

Friday morning

no. 27, Device Ontology (91), Heikki Helin

- check examples: quotes and parenthesis in particular
- put all symbols in lower case
- replace :min-depth with max-depth
- Page 16, line 352: the content of the example is wrong because the second argument of iota must be a Predicate. Also the name of the language should be FIPA-SL and not fipa-sl0. That means that we need to implement one of these alternatives: a new Predicate (e.g. (ExistsObject (Device ...)) or (Matches ?x (Device :hw-description ?x))), the Search action, or using the FIPA-Meta-Ontology to reason about ontological objects and the values of their slots. Decision: Add SEARCH action in the Device-Ontology + refer to the Fipa-Agent-Management specs for the definition of the matching criteria.

- Check the new definition of AP-Description as modified in the Fipa-Agent-Management specs

no. 28, Message Buffering Service (spec no. 92) , Heikki Helin

X2S decided that this spec is not going to be proposed to become standard because so far there is not yet an implementation of the specifications.

no. 29, Message Interoperability Service (spec no. 93), Heikki Helin

X2S decided that this spec is not going to be proposed to become standard because so far there is not yet an implementation of the specifications.

no. 30, Nomadic Application Support (spec no. 14), Heikki Helin

see comments directly in the spec document, just to check possible mistakes
 proposal: split the document into 2 documents: a short document defining the QoS ontology + an informative document with the examples. Approved but this must be done only when FAB has decided what to do with the informative documents.

no. 31, WAP MTP (spec no. 76), Heimo

X2S decided that this spec is not going to be proposed to become standard because so far there is not yet an implementation of the specifications.

no. 32, Bit Efficient ACLCodec (spec no. 69), Heikki Helin

change the type of the Content value from BixExpr to BinString
 add Sign? to the DateTimeToken

no. 33, BitEfficient Envelope (spec no. 88), Heikki Helin

add user-defined slots in all the frames

7 SUMMARY OF CHANGES IN THE SPECS

no. version	spec – editor	approved changes	
1 K	Abstract Architecture Dominic Greenwood	All document	All instances of service-id replaced with service-name for coherence with agent-name .
		All document	Delete action changed to Deregister for both agent-directory-service and

		<p>All document</p> <p>Section 5.23.3</p>	<p>service-directory-service.</p> <p>Query action changed to Search for both agent-directory-service and service-directory-service.</p> <p>Note that all actions of the service-directory-service are optional</p>
23 I	Agent Management – Jonathan Dale	<p>Entire specification:</p> <p>Entire specification:</p> <p>Entire specification:</p> <p>Entire specification:</p> <p>Page 2, line 105:</p> <p>Page 2, lines 108-116:</p> <p>Page 2, line 118:</p> <p>Page 2, line 120:</p> <p>Page 3, line 125:</p> <p>Page 3, line 143:</p> <p>Page 4, line 151:</p> <p>Page 4, line 173:</p> <p>Page 6, line 215:</p> <p>Page 6, line 260:</p> <p>Page 7, lines 265-266:</p>	<p>Removed all leading colons (:) from parameter names.</p> <p>Changed all ontology terms to lowercase.</p> <p>Various typo changes to all examples.</p> <p>Changed references of <i>hap</i> to <i>hap_name</i>.</p> <p>Added a footnote linking agent management services to the Abstract Architecture notion of service.</p> <p>Added a new definition for agent which is compatible with [FIPA00001].</p> <p>Removed the requirement that the DF is a mandatory component of the AP.</p> <p>Added a link between the DF and the Agent Directory Service from [FIPA00001].</p> <p>Added a link between the AMS and the Agent Directory Service from [FIPA00001].</p> <p>Removed obsolete reference to dynamic registration.</p> <p>Restructured section on Agent Naming to list all components of an AID and cross-reference with equivalents in [FIPA00001].</p> <p>Added a sentence describing AID equivalence.</p> <p>Removed the requirement that the DF is a mandatory component of the AP.</p> <p>Changed incorrect reference to <i>df-search-result</i> to <i>max-results</i>.</p> <p>Removed obsolete reference to</p>

		<p>dynamic registration.</p> <p>Page 7, lines 278-280: Removed sentences describing the requirements that the AMS must check all MTS message sends and receives.</p> <p>Page 7, line 297: Added a link between the name parameter of the AMS and the Service Root from [FIPA00001].</p> <p>Page 8, line 331: Removed section on Mandatory Functions Supported by Agents (specifically quit).</p> <p>Page 9, line 345: Added an explanatory sentence to the agent life cycle description.</p> <p>Page 10, lines 414, 427: Removed incorrect reference to [FIPA00005].</p> <p>Page 11, lines 429-431: Removed obsolete reference to dynamic registration.</p> <p>Page 11, lines 433-435: Removed obsolete references to dynamic registration.</p> <p>Page 12, line 493: Added a link between the addresses parameter and the Locator from [FIPA00001].</p> <p>Page 13, line 497: Added a link between the df-agent-description and the Agent Directory Entry from [FIPA00001].</p> <p>Page 13, line 498: Added a footnote requiring at least one AID to be present, except when searching.</p> <p>Page 14, line 509: Added a link between the ams-agent-description and the Agent Directory Entry from [FIPA00001].</p> <p>Page 14, Line 510: Added a footnote requiring at least one AID to be present, except when searching.</p> <p>Page 14, line 512: Removed mobility parameter from ap-description.</p> <p>Page 14, line 512: Removed dynamic parameter from ap-description.</p> <p>Page 14, line 512: Changed name of transport-profile parameter to ap-services. Changed type to a set of ap-</p>
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		<p>services.</p> <p>Page 15, line 514: Added new section 6.1.7 on Agent Service Description (AP-Service).</p> <p>Page 17, line 588: Removed the incorrect word ‘template’ at the end of the sentence.</p> <p>Page 17, line 609: Changed 1MHZ to 1 in example.</p> <p>Page 18, line 642: Removed quit function.</p> <p>Page 18, lines 647-649: Changed the exception model from predicates which return true to propositions that evaluate to true.</p>
67 F	Message Transport Service – Fabio Bellifemine	<p>All document: Replaced all references to ‘message body’ and ‘message content’ with ‘message payload’</p> <p>All document: Removed the prefix symbol ‘.’ from all the parameter names</p> <p>Page 2, line 95: Replaced the figure</p> <p>Page 2, line 108-111: Added a sentence to clarify that agents might need processing of the envelope</p> <p>Page 3, line 147-152 : Replaced the sentence with a less ambiguous one.</p> <p>Page 4, line 164-168 : Deleted</p> <p>Page 4, line 185 : transport-behaviour parameter reserved for future use</p> <p>Page 4, line 197-198 : Added sentence to reinforce a requirement of ACC</p> <p>Page 6, line 247-248 : Added sentence to reinforce a requirement of ACC</p> <p>Page 6, line 262-263 : Deleted sentence.</p> <p>Page 6, line 278-279 : Clarified that implementation can ignore arguments of internal-error</p> <p>Page 7, line 316-350 : Modified the example according to the new definition of ap-description</p> <p>Page 9, line 383 : Added reserved values for acl-representation. Relaxed the requirement that the parameter date had to be added by the sending agent.</p> <p>Page 10, line 385 : Added requirement for sending ACC to generate unique id. Added reserved values for via</p>

		parameter. Page 10, line 387-391 : Removed definitions of ap-transport-description and mtp-description made obsolete by the new definition of ap-description in [FIPA00023]
26 G	fipa-request – Jim Odell and Misty Nodine	<p>Page 1, Figure 1 : The communication labeled «inform-ref» was changed to «inform-result» for clarity. The purpose of this communication is to inform the initiator of a results. Inform-result implies inform-done.</p> <p>Page 1, Figure 1 : The «not-understood» communication was removed</p> <p>Page 1, Figure 1 : Reworked the protocol flow to make the «agree» optional. This also involved changing the exclusive-or with the agree to a different AUML notation.</p> <p>Page 1, line 50 : Added a new section 1.1 entitled « Explanation of the Protocol Flow »</p> <p>Page 1, line 50 : Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP. Page 1, line 42 : Removed some of the explanation, it was superseded by the explanation in Section 1.2.</p> <p>Page iii Regenerated Table of Contents</p>
27 G	fipa-query – Jim Odell and Misty Nodine	<p>Page 1, Figure 1 : The «not-understood» communication was removed</p> <p>Page 1, Figure 1 : Reworked the protocol flow to insert an optional «agree». Also, made explicit the different inform response content expected for a query-if as opposed to a query-ref.</p> <p>Page 1, line 54 : Added a new section 1.1 entitled « Explanation of the Protocol Flow »</p> <p>Page 4, line 54 : Renumbered old section 1.1 to section 1.2. Added a paragraph</p>

		<p>explaining the not-understood communication and its relationship with the IP.</p> <p>Page iii</p> <p>Regenerated Table of Contents</p>
28 G	fipa-request-when – Jim Odell and Misty Nodine	<p>Page 1, figure 1 : The communication labeled «inform-ref» was changed to «inform-result» for clarity. The purpose of this communication is to inform the initiator of a results. Inform-result implies inform-done.</p> <p>Page 1, figure 1 : The not-understood communication was removed.</p> <p>Page 1, line 43 : Moved a portion of the section introduction to the new section 1.1.</p> <p>Page 1, line 56 : Added a new section 1.1, entitled « Explanation of the Protocol Flow ».</p> <p>Page 1, line 56 : Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.</p>
29 G	fipa-contract-net – Jim Odell and Misty Nodine	<p>Page 1, figure 1 : The communication labeled «inform-ref» was changed to «inform-result» for clarity. The purpose of this communication is to inform the initiator of a results. Inform-result implies inform-done.</p> <p>Page 1, figure 1 : The not-understood communication was removed.</p> <p>Page 1, line 43 : Moved a portion of the section introduction to the new section 1.1 and enhanced it.</p> <p>Page 1, line 72 : Added a new section 1.1, entitled « Explanation of the Protocol Flow ».</p> <p>Page 1, line 72 : Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.</p>
30 G	fipa-iterated-contract-net – Jim Odell and Misty Nodine	<p>Page 1, figure 1 : The not-understood communication was removed.</p> <p>Page 1, line 50 : Moved a portion of the section introduction to the new section 1.1 and enhanced it.</p> <p>Page 1, line 57 : Added a new section 1.1, entitled « Explanation of the</p>

		Page 1, line 57 :	Protocol Flow ». Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.
31 G	fipa-english-auction IP - – Jim Odell and Misty Nodine	Page 1, line 51 : Page 2, line 75: Page 2, line 75:	Moved a portion of the section introduction to the new section 1.1 and enhanced it. Added a new section 1.1, entitled « Explanation of the Protocol Flow ». Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.
32 G	fipa-dutch-action IP - – Jim Odell and Misty Nodine	Page 1, line 48 : Page 2, line 69: Page 2, line 69:	Moved a portion of the section introduction to the new section 1.1 and enhanced it. Added a new section 1.1, entitled « Explanation of the Protocol Flow ». Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.
33 G	fipa-brokering IP - – Jim Odell and Misty Nodine	Page 1, line 60-63: Page 2, Figure 1 : Page 2, Figure 1 : Page 2, Figure 1 :	Moved paragraph down to be part of new section 1.1, « The «not-understood» communication was removed The last set of communicative acts was removed and a more generic one was inserted. The more generic one indicates that the Broker is going to forward the responses it received from the sub-protocol. Alternatively, if the Broker notices some failure such as no response at all from the sub-protocol after a given time period, the Broker may send the Initiator a failure of its own. Multiple subprotocols were indicated by inserting m, n and p

		<p>respectively on three arcs. M subprotocols can be started, resulting in n responses, that the Broker can consolidate into p responses to the Initiator</p> <p>Page 2, line 70 : Added a new section 1.1 entitled « Explanation of the Protocol Flow »</p> <p>Page 2, line 70 : Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.</p> <p>Page iii Regenerated Table of Contents</p>
34 G	fipa-recruiting IP - – Jim Odell and Misty Nodine	<p>Page 1, lines 43-61: Changed explanation to be more directly related to recruiting IP as opposed to brokering IP.</p> <p>Page 2, Figure 1 : The «not-understood» communication was removed</p> <p>Page 2, Figure 1 : The last set of communicative acts was removed and a more generic one was inserted. The more generic one indicates that the subprotocols are going to forward their responses (failure or references) to either the Initiator or the Designated Receiver. Also, changed the name « destinator » to « designated receiver »</p> <p>Page 2, Figure 1 : Multiple subprotocols were indicated by inserting m and n respectively on two arcs. M subprotocols can be started, resulting in n responses.</p> <p>Page 2, line 69 : Added a new section 1.1 entitled « Explanation of the Protocol Flow »</p> <p>Page 2, line 69 : Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.</p> <p>Page iii Regenerated Table of Contents</p> <p>Page 3, after Line 78: Added reference to FIPA00061</p>
36 G	fipa-propose IP - Jim Odell and Misty	<p>Page 1, Figure 1 : The «not-understood» communication was removed</p>

	Nodine	<p>Page 1, lines 43-47: Streamlined the initial explanation</p> <p>Page 1, line 54 : Added a new section 1.1 entitled « Explanation of the Protocol Flow »</p> <p>Page 1, line 54 : Renumbered old section 1.1 to section 1.2. Added a paragraph explaining the not-understood communication and its relationship with the IP.</p>
85 I	XML Envelope – Jonathan Dale	<p>Entire specification: Removed all leading colons (:) from parameter names.</p> <p>Entire specification: Corrected examples.</p> <p>Page 2, line 90: Extended params definition to allow user-defined fields.</p> <p>Page 3, line 113: Extended agent-identifier definition to allow user-defined fields.</p> <p>Page 3, line 130: Extended received definition to allow user-defined fields.</p> <p>Page 3, line 132: Changed type of received-by to url.</p> <p>Page 3, line 135: Changed type of received-from to url.</p> <p>Page 4, line 190: Added a rule for prefix string for user-defined fields.</p>
71 D	XML ACLCodec – Jonathan Dale	<p>Page 2, line 63: Improved readability of the XML.</p> <p>Page 2, line 86: Extended msg-params definition to allow user-defined fields.</p> <p>Page 2, line 104: Changed the cardinality of receiver to one or more (+).</p> <p>Page 3, line 166: Changed the cardinality of reply-to to one or more (+).</p>
61 F	ACL Parameters – Fabio Bellifemine	<p>Page 1, line 64-65: removed reference to maintenance procedures and inclusion criteria</p> <p>Page 2, line 83-84 : added requirement that additional parameters have the "X-" prefix</p> <p>Page 5, line 180-187 : added requirements to control the conversations</p> <p>Page 5, line 195-198 : added requirement that conversation-id be a globally unique identifier</p> <p>Page 7, line 222-260 : Removed section 3</p>

37 I	ACL – Fabio Bellifemine	<p>All document : Corrected the examples by quoting the content and escaping the quote symbols</p> <p>All document : All symbols defined by FIPA are in lower case</p> <p>Page 2,3 : Removed sections 2.2 and 2.3 : maintenance and inclusion criteria</p> <p>Page 12, line 213: Added a clarification note on the usage of inform-if macro act</p> <p>Page 13, line 215: Added a clarification note on the usage of inform-ref macro act</p> <p>Page 15, line 216 : Removed ambiguity in identifying the sender of the message</p>
8 H	SL – Fabio Bellifemine	<p>Page 1, line 72-75: Removed redundant sentence.</p> <p>Page 2, line 78-79 : Added symbol identifying fipa-sl content language.</p> <p>Page 2, line 113-119 : Removed superfluous binary term operators</p> <p>Page 3, line 147-155 : Removed superfluous functional term operators</p> <p>Page 3, line 188-192 : Removed superfluous arithmetic operators</p> <p>Page 4, line 233 : Added optional Sign symbol to represent relative time</p> <p>Page 6,7, line 351-382 :Removed description of superfluous operators</p> <p>Entire document : Fixed bugs in the examples, by adding quotes and converting symbols into lower case</p> <p>Page 11,12, line 647-651 :Removed description of superfluous operators</p> <p>Page 12, line 613 : Added description of the actor of an ACLMessage</p> <p>Page 12, line 626 : Clarification of how to express an Agent identifier.</p> <p>Page 13, line 693-695 : Added description of relative time</p> <p>Page 13: Added section 3.9 with some notes on the grammar.</p>
70 H	ACLStringCodec – Fabio Bellifemine	<p>Page 3, line 138: Fixed the definition of relative time</p> <p>Page 4, line 180-194 : Added description of definition of relative time.</p>
91	Device Ontology – Heikki Helin	<ul style="list-style-type: none"> - check examples: quotes and parenthesis in particular - put all symbols in lower case

		<ul style="list-style-type: none"> - replace :min-depth with max-depth - Page 16, line 352: the content of the example is wrong because the second argument of iota must be a Predicate. Also the name of the language should be FIPA-SL and not fipa-sl0. Add SEARCH action in the Device-Ontology + refer to the Fipa-Agent-Management specs for the definition of the matching criteria. - Check the new definition of AP-Description as modified in the Fipa-Agent-Management specs
91	Device Ontology - Heikki Helin	see comment no. 27
14	Nomadic Application Support – Heikki Helin	see comment no. 30
69	BitEfficient ACLCodec – Heikki Helin	see comment no. 32
88	BitEfficient Envelope – Heikki Helin	see comment no. 33
TODO	ALL	check all the examples and put in lower case all the symbols defined by hFIPA

8 Pending Issues to discuss via e-mail between now and Helsinki

- DF and lease-time; in particular report on JINI and DHCP
- DF Federation
- HTTP MTP specifications (need clarifications from Ion)
- XML Envelope (need clarifications from Ion)
- ACLMessage parameters:
 - o new ACLMessage parameter to express the order of the messages sent within the scope of a conversation (e.g. conversation-msg-no 1)
 - o add new parameter to the ACLMessage structure to specify a deadline for a conversation. (e.g. conversation-expiration-time endOfMay)
- Should IIOP MTP specs include definition of URI or pointer to where it is defined
- What to do with the informative documents

9 Resolutions

The X2S TC recommends FIPA to approve the following resolutions:

- recommend FIPA to publish the minutes of this X2S meeting, the list of approved changes, and all the modified specifications in the public X2S area of the FIPA Web site for review from the entire community. All membership is invited to carefully

consider and review all the approved changes that, in some cases, breaks compatibility of the existing implementation.

- recommend FIPA members and/or developers to submit more comments for consideration during the next meeting
 - appoint Jonathan Dale to report at the next X2S meeting in Helsinki about how JINI and DHCP implement the lease-time for yellow-page subscription
 - recommend FIPA members to submit a workplan for finalizing the work on the fipa-suscribe Interaction Protocol
 - recommend FAB to produce a guideline document for maintenance of the specifications and publish it on the public area of the Web site (see for instance the doc. no. 61 and doc. no. 37)
 - recommend FIPA to publish all the application-related specifications as informative documents, in particular the following documents: Personal Assistant (83), Network Management and Provisioning (82), Audio-visual Entertainment and Broadcasting (81), Personal Travel Assistance (80), part of Nomadic Application Support (14).
 - invite membership to collect information about implementations and usage of the FIPA specifications
 - recommend FIPA to produce and approve a document with the list of all the symbols defined by FIPA and a pointer to the specification number where they have been defined and where they have been used. If FIPA approves that, than X2S will consider to produce it in Helsinki (if there will be enough volunteers to do that!).
 - the following specifications have been identified not to be proposed for standard status considered that X2S is not aware of any implementation:
 - o spec no. 76, WAP MTP
 - o spec no. 92, Message Buffering Service
 - o spec no. 93, Message Interoperability Service
- this decision can be reconsidered if, before the next FIPA meeting, X2S was made aware of any existing implementation or of any FIPA member still wishing to propose them to standard
- o thank all those people who have contributed to the meeting by sending comments or by actively participating to the discussion