FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

FIPA Not Understood Communicative Act Specification

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Foreword

The Foundation for Intelligent Physical Agents (FIPA) is an international organization that is dedicated to promoting the industry of intelligent agents by openly developing specifications supporting interoperability among agents and agent-based applications. This occurs through open collaboration among its member organizations, which are companies and universities that are active in the field of agents. FIPA makes the results of its activities available to all interested parties and intends to contribute its results to the appropriate formal standards bodies.

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FIPA is a non-profit association registered in Geneva, Switzerland. As of January 2000, the 56 members of FIPA represented 17 countries worldwide. Further information about FIPA as an organization, membership information, FIPA specifications and upcoming meetings may be found at http://www.fipa.org/.

Contents

1   Scope

This document specifies the Not Understood communicative act which is compliant to [FIPA00037] requirements.

2   Not Understood

Summary	The sender of the act (for example, i) informs the receiver (for example, j) that it perceived that j performed some action, but that i did not understand what j just did. A particular common case is that i tells j that i did not understand the message that j has just sent to i.
Content	A tuple consisting of an action or event, for example, a communicative act, and an explanatory reason.
Description	The sender received a communicative act which it did not understand. There may be several reasons for this: the agent may not have been designed to process a certain act or class of acts, or it may have been expecting a different message. For example, it may have been strictly following a pre-defined protocol, in which the possible message sequences are predetermined. The *not-understood* message indicates to that the sender of the original (misunderstood) action that nothing has been done as a result of the message. This act may also be used in the general case for i to inform j that it has not understood j's action. The second term of the content tuple is a proposition representing the reason for the failure to understand. Note: It is not possible to fully capture the intended semantics of an action not being understood by another agent. The characterization below captures that an event happened and that the recipient of the not-understood message was the agent of that event. Additionally, because it is possible that ϕ (the reason for failure) is not a well-formed formula, ϕ cannot be part of the semantic characterization.

Formal Model	`<i, not-understood(j, a, φ)>≡`
	    `<i, Inform( j,  α >`
	        FP: $B_i\ \alpha\ \wedge\ \neg B_i\ (Bif_j\ \alpha\ \vee\ Uif_j\ \alpha)$
	        RE: $B_j\ \alpha$
	
	Where:
	
	  $\alpha = \phi \wedge (\exists x)\ B_i\ ((\iota e\ Done(e) \wedge Agent(e,\ j) \wedge B_j(Done(e) \wedge Agent(e,\ j) \wedge (a = e))) = x).$

Example	Agent i did not understand a *query-if* message (see [FIPA00053]) because it did not recognize the ontology.
	
	<pre>(not-understood
	  :sender i
	  :receiver j
	  :content
	    ((query-if
	       :sender j
	       :receiver i …)
	      (unknown (ontology www)))
	  :language FIPA-SL)</pre>

3   References

[FIPA00037]   FIPA Communicative Act Library Specification. Foundation for Intelligent Physical Agents, 2000.
                `http://www.fipa.org/specs/fipa00037/`
[FIPA00053]   FIPA Query If Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.
                `http://www.fipa.org/specs/fipa00053/`