FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

FIPA CFP Communicative Act Specification

Document title	FIPA CFP Communicative Act Specification		
Document number	DC00042A	Document source	FIPA TC C
Document status	Deprecated	Date of this status	2000/10/16
Supersedes	None		
Contact	fab@fipa.org		
Change history			
2000/10/16	Deprecated by FIPA00037		

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.

The members of FIPA are individually and collectively committed to open competition in the development of agent-based applications, services and equipment. Membership in FIPA is open to any corporation and individual firm, partnership, governmental body or international organization without restriction. In particular, members are not bound to implement or use specific agent-based standards, recommendations and FIPA specifications by virtue of their participation in FIPA.

The FIPA specifications are developed through direct involvement of the FIPA membership. The status of a specification can be either Preliminary, Experimental, Standard, Deprecated or Obsolete. More detail about the process of specification may be found in the FIPA Procedures for Technical Work. A complete overview of the FIPA specifications and their current status may be found in the FIPA List of Specifications. A list of terms and abbreviations used in the FIPA specifications may be found in the FIPA Glossary.

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 Call for Proposal (CFP) communicative act which is compliant to [FIPA00037] requirements.

2   Call for Proposal

Summary	The action of calling for proposals to perform a given action.
Content	A tuple containing an action expression denoting the action to be done and a proposition denoting the preconditions on the action.
Description	*CFP* is a general-purpose action to initiate a negotiation process by making a call for proposals to perform the given action. The actual protocol under which the negotiation process is established is known either by prior agreement, or is explicitly stated in the `:protocol` parameter of the message. In normal usage, the agent responding to a *cfp* should answer with a proposition giving its conditions on the performance of the action. The responder's conditions should be compatible with the conditions originally contained in the *cfp*. For example, the *cfp* might seek proposals for a journey from Frankfurt to Munich, with a condition that the mode of travel is by train. A compatible proposal in reply would be for the 10.45 express train. An incompatible proposal would be to travel by airplane. Note that *cfp* can also be used to simply check the availability of an agent to perform some action.

Formal Model	$<i,\ \mathtt{cfp}(\ j,\ <j,\ act>,\ \phi(x)\ )> \equiv$
	
	  $<i,\ \mathtt{query\text{-}ref}(j,\ \iota x\ (I_i\ \mathtt{Done}(<j,\ act>,\ \phi(x)) \Rightarrow$
	                          $(I_j\ \mathtt{Done}(<j,\ act>,\ \phi(x)))))>$
	
	    $\mathtt{FP}\colon \neg\mathtt{Bref}_i(\iota x\ \alpha(x)) \wedge \neg\mathtt{Uref}_i(\iota x\ \alpha(x)) \wedge$
	                      $\neg\mathtt{B}_i\ I_j\ \mathtt{Done}(<j,\ \mathtt{Inform\text{-}ref}(i,\ \iota x\ \alpha(x))>)$
	    $\mathtt{RE}\colon \mathtt{Done}(<j,\ \mathtt{Inform}(i,\ \iota x\ \alpha(x)\ =\ r_1)>\mid\ \dots\ \mid<j,$
	                $\mathtt{Inform}(i,\ \iota x\ \alpha(x)\ =\ r_k)>)$
	
	Where:
	
	  $\alpha(x) = I_i\ \mathtt{Done}(<j,\ act>,\ \phi(x)) \Rightarrow I_j\ \mathtt{Done}(<j,\ act>,\ \phi(x))$
	
	Agent *i* asks agent *j*: "What is the '*x*' such that you will perform action *'act'* when '$\phi(x)$' holds?"

Example	Agent j asks i to submit its proposal to sell 50 boxes of plums:
	
	``
	(cfp
	  :sender j
	  :receiver i
	  :content
	    ((action i
	      (sell plum 50))
	      true)
	  :ontology fruit-market)
	``

3 References

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