

FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

FIPA CFP Communicative Act Specification

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42 **1 Scope**

43 This document specifies the Call for Proposal (CFP) communicative act that is compliant to [FIPA00037] requirements.

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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	<p><i>CFP</i> 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 <code>:protocol</code> parameter of the message.</p> <p>In normal usage, the agent responding to a <i>cfp</i> 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 <i>cfp</i>. For example, the <i>cfp</i> 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.</p> <p>Note that <i>cfp</i> can also be used to simply check the availability of an agent to perform some action.</p>
Formal Model	<pre><i, cfp(j, <j, act>, (x))> <i, query-ref(j, x (I_i Done(<j, act>, (x)) (I_j Done(<j, act>, (x))))> FP: Bref_i(x (x)) Uref_i(x (x)) B_i I_j Done(<j, Inform-ref(i, x (x))>) RE: Done(<j, Inform(i, x (x) = r_1)> ... <j, Inform(i, x (x) = r_k)>)</pre> <p>Where:</p> $(x) = I_i \text{ Done}(\langle j, act \rangle, (x)) \quad I_j \text{ Done}(\langle j, act \rangle, (x))$ <p>Agent <i>i</i> asks agent <i>j</i>: "What is the '<i>x</i>' such that you will perform action '<i>act</i>' when '<i>(x)</i>' holds?"</p>
Example	<p>Agent <i>j</i> asks <i>i</i> to submit its proposal to sell 50 boxes of plums:</p> <pre>(cfp :sender j :receiver i :content ((action i (sell plum 50)) true) :ontology fruit-market)</pre>

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48 **3 References**

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