

# FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

## FIPA Inform If Communicative Act Specification

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*Geneva, Switzerland*

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## **1 Scope**

This document specifies the Inform If communicative act which is compliant to [FIPA00037] requirements.

## 2 Inform If

<b>Summary</b>	A macro action for the agent of the action to inform the recipient whether or not a proposition is true.
<b>Content</b>	A proposition.
<b>Description</b>	<p>The <i>inform-if</i> macro act is an abbreviation for informing whether or not a given proposition is believed. The agent which enacts an <i>inform-if</i> macro-act will actually perform a standard <i>inform</i> act (see [FIPA00046]). The content of the inform act will depend on the informing agent's beliefs. To <i>inform-if</i> on some closed proposition <math>\phi</math></p> <ul style="list-style-type: none"> <li>• if the agent believes the proposition, it will inform the other agent that <math>\phi</math>, and,</li> <li>• if it believes the negation of the proposition, it informs that <math>\phi</math> is false (i.e. <math>\neg\phi</math>).</li> </ul> <p>Under other circumstances, it may not be possible for the agent to perform this plan. For example, if it has no knowledge of <math>\phi</math> or will not permit the other party to know (that it believes) <math>\phi</math>, it will send a <i>refuse</i> message (see [FIPA00055]).</p>
<b>Formal Model</b>	$\langle i, \text{inform-if}(j, \phi) \rangle \equiv$ $\langle i, \text{inform}(j, \phi) \rangle   \langle i, \text{inform}(j, \neg\phi) \rangle$ <p>FP: <math>Bif_i \phi \wedge \neg B_i (Bif_j \phi \vee Uif_j \phi)</math></p> <p>RE: <math>Bif_j \phi</math></p> <p><i>Inform-if</i> represents two possible courses of action: <i>i</i> informs <i>j</i> that <math>\phi</math>, or <i>i</i> informs <i>j</i> that not <math>\phi</math>.</p>
<b>Example</b>	<p>Agent <i>i</i> requests <i>j</i> to inform it whether Lannion is in Normandy.</p> <pre>(request   :sender i   :receiver j   :content     (inform-if       :sender j       :receiver i       :content         "in( lannion, normandy )"       :language Prolog)   :language FIPA-SL)</pre> <p>Agent <i>j</i> replies that it is not:</p> <pre>(inform   :sender j   :receiver i   :content     "\+ in( lannion, normandy )"   :language Prolog)</pre>

### 3 References

- [FIPA00037] FIPA Communicative Act Library Specification. Foundation for Intelligent Physical Agents, 2000.  
<http://www.fipa.org/specs/fipa00037/>
- [FIPA00046] FIPA Inform Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.  
<http://www.fipa.org/specs/fipa00046/>
- [FIPA00055] FIPA Refuse Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.  
<http://www.fipa.org/specs/fipa00055/>