

# FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

## FIPA Disconfirm Communicative Act Specification

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*Geneva, Switzerland*

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**Contents**

1 Scope..... 1  
2 Disconfirm..... 2  
3 References..... 3

## **1 Scope**

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

## 2 Disconfirm

<b>Summary</b>	The sender informs the receiver that a given proposition is false, where the receiver is known to believe, or believe it likely that, the proposition is true.
<b>Content</b>	A proposition.
<b>Description</b>	<p>The disconfirm act is used when the agent wishes to alter the known mental attitude of another agent.</p> <p>The sending agent:</p> <ul style="list-style-type: none"> <li>• believes that some proposition is false,</li> <li>• intends that the receiving agent also comes to believe that the proposition is false, and,</li> <li>• believes that the receiver either believes the proposition, or is <i>uncertain</i> of the proposition.</li> </ul> <p>The first two properties defined above are straightforward: the sending agent is sincere, and has (somehow) generated the intention that the receiver should know the proposition (perhaps it has been asked). The last pre-condition determines when the agent should use <i>confirm</i> (see [FIPA00043]), <i>inform</i> (see [FIPA00046]) or <i>disconfirm</i>: <i>disconfirm</i> is used precisely when the other agent is already known to believe the proposition or to be uncertain about it.</p> <p>From the receiver's viewpoint, receiving a <i>disconfirm</i> message entitles it to believe that:</p> <ul style="list-style-type: none"> <li>• the sender believes that the proposition that is the content of the message is false, and,</li> <li>• the sender wishes the receiver to believe the negated proposition also.</li> </ul> <p>Whether or not the receiver does, indeed, change its mental attitude to one of disbelief in the proposition will be a function of the receiver's trust in the sincerity and reliability of the sender.</p>
<b>Formal Model</b>	<pre>&lt;i, disconfirm( j, φ )&gt;   FP: B<sub>i</sub>¬φ ∧ B<sub>i</sub>(U<sub>j</sub>φ ∨ B<sub>j</sub>φ)   RE: B<sub>j</sub>¬φ</pre>
<b>Example</b>	<p>Agent i, believing that agent j thinks that a shark is a mammal, attempts to change j's belief.</p> <pre>(disconfirm  :sender i  :receiver j  :content  (mammal shark))</pre>

### 3 References

- [FIPA00037] FIPA Communicative Act Library Specification. Foundation for Intelligent Physical Agents, 2000.  
<http://www.fipa.org/specs/fipa00037/>
- [FIPA00043] FIPA Confirm Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.  
<http://www.fipa.org/specs/fipa00043/>
- [FIPA00046] FIPA Inform Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.  
<http://www.fipa.org/specs/fipa00046/>