

# Coalition Task Support using I-X and <I-N-C-A>

Austin Tate

Artificial Intelligence Applications Institute, University of Edinburgh,  
Appleton Tower, Crichton Street, Edinburgh EH8 9LE, UK  
a.tate@ed.ac.uk  
<http://www.aiai.ed.ac.uk/project/ix/>

**Abstract.** I-X is a research programme (Tate, 2000b) with a number of different aspects intended to create a well-founded approach to allow humans and computer systems to cooperate in the creation or modification of some product such as a design, physical entity or plan - i.e. it supports cooperative synthesis tasks. The I-X approach involves the use of shared models for task-directed cooperation between human and computer agents who are jointly exploring (via some, perhaps dynamically determined, process) a range of alternative options for the synthesis of an artifact such as a design or a plan (termed a product).

The <I-N-C-A> (Issues - Nodes - Constraints - Annotations) ontology (Tate, 2000a) is used to represent a specific artifact as a set of constraints on the space of all possible artifacts in an application domain. It can be used to describe the requirements or specification to be achieved and the emerging description of the artifact itself. It can also describe the (perhaps dynamically generated) processes involved.

I-X and I-X Process Panels (I-P<sup>2</sup>) concepts have been demonstrated in a number of realistic scenarios such as in Air Campaign Planning (Tate et. al. 1998), Military Operations in Urban Terrain (Tate, et. al., 2000), the Coalition Agents eXperiment - CoAX (Allsop et. al., 2002), and Coalition Search and Rescue (CoSAR-TS Team, 2003). They are being considered for use in a number of future joint and multi-national forces experiments and demonstrations.

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