



Australian Government

Department of Defence

Defence Science and
Technology Organisation

Applying Influence Diagrams to Support Collective C2 in Multinational Civil- Military Operations

Daniel Bilusich, Fred DJ Bowden and Svetoslav Gaidow
Land Operations Division

Contents

Overview of Influence Diagrams (IDs)

- Example of an ID

Adaptive Campaigning – Future Land Operating Concept

- Example of an ID

Application to Support Collective C2 in Multinational Civil-Military Operations

- Aid in forming a coherent operational approach
- Development and communication of Commander's intent
- Distribution of roles
- Interactions between actors

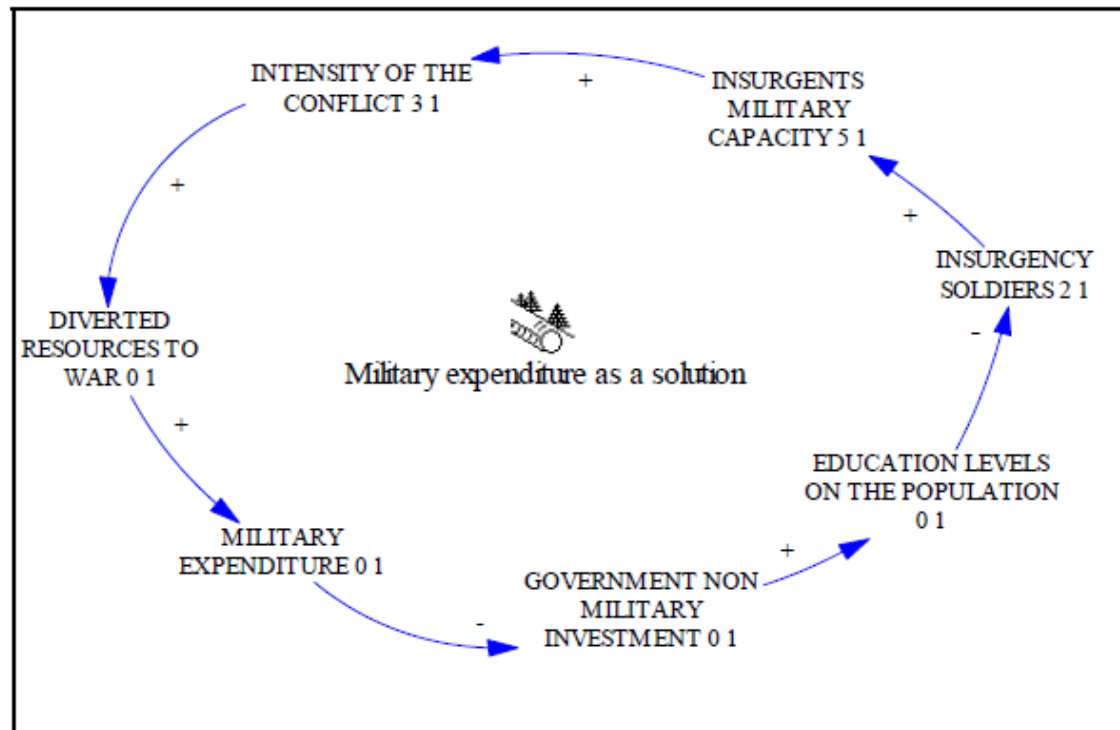
Summary of Outcomes

Quick Overview of IDs

Influence Diagrams:

- Identify influences, one action/event has over other actions/events.
- Better understanding of relationships, connections and effects.
- Qualitative Tool

Simple Example from: A. Diaz, Rethinking the conflict trap: systems dynamics as a tool to understanding civil wars - the case of Colombia. Conference Proceedings. 2008 International Conference of the System Dynamics Society July 20 - 24, Athens, Greece



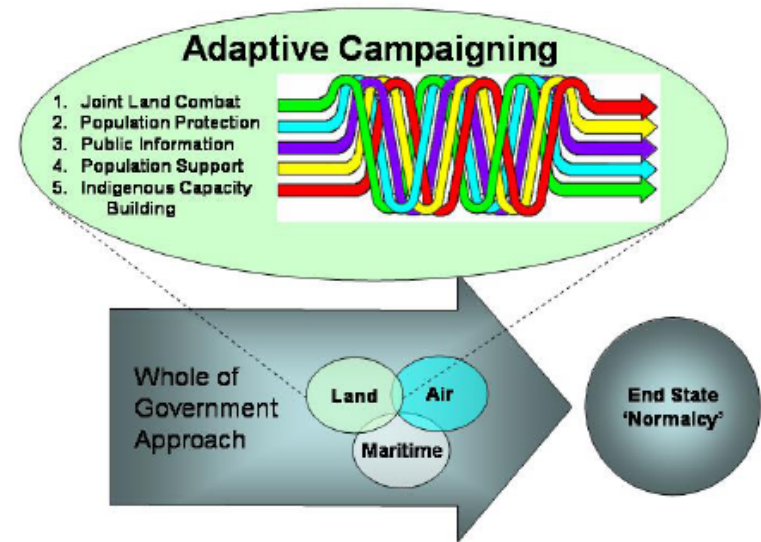
A Starting Point (AC- FLOC)

Adaptive Campaigning – Future Land Operating Concept Five Concurrent Inter-Related Lines of Operation

- Joint Land Combat
- Population Protection
- Information Actions
- Population Support
- Indigenous Capacity Building

Other nations have similar approaches
Some of these are summarised in the paper

- UK
- US
- Canada
- Netherlands



Australian Army 2009, *Adaptive Campaigning 09: Army's Future Land Operating Concept*, prepared by Head Modernisation and Strategic Planning - Army, Army Headquarters, Canberra

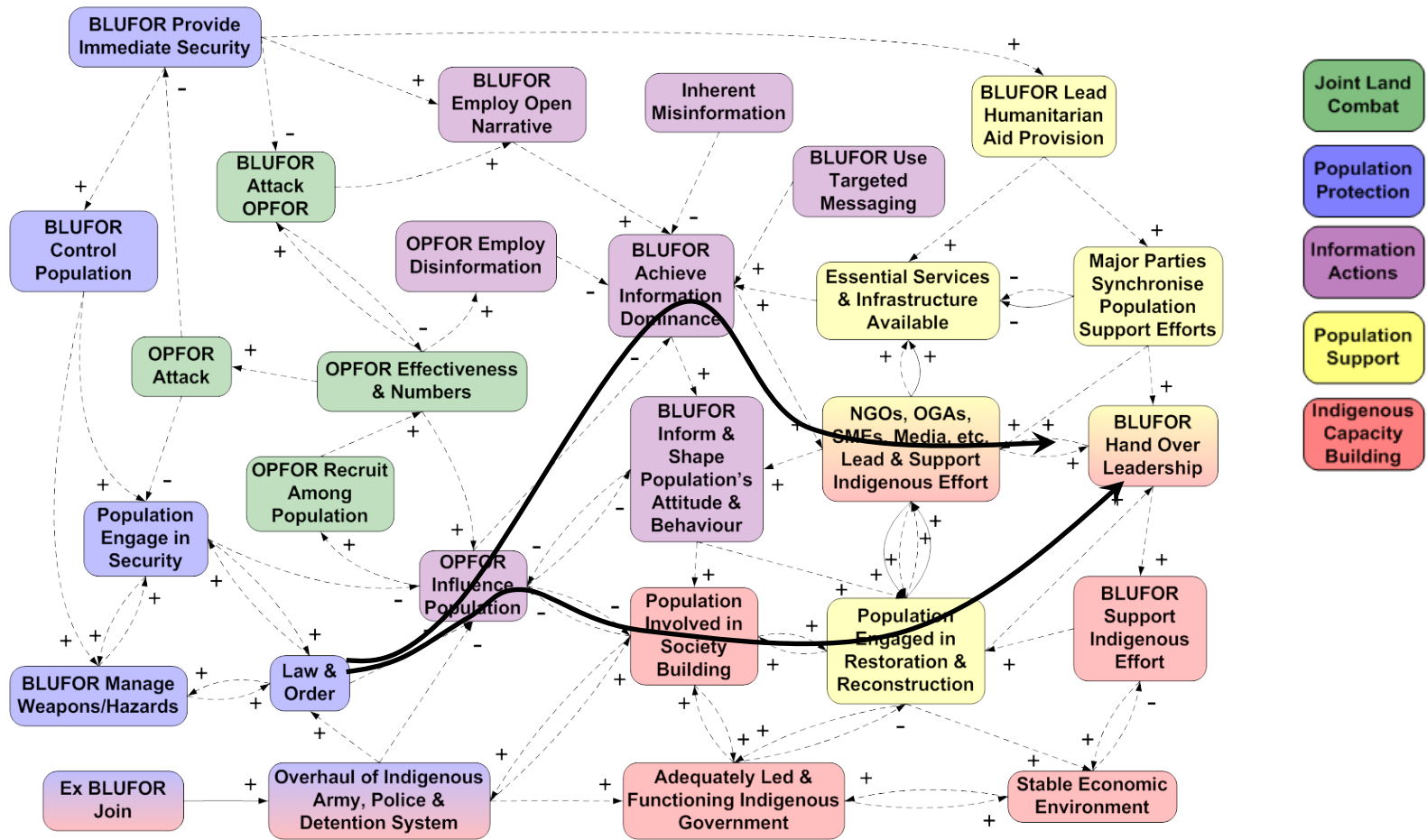
Essential Tasks and Events AC ID



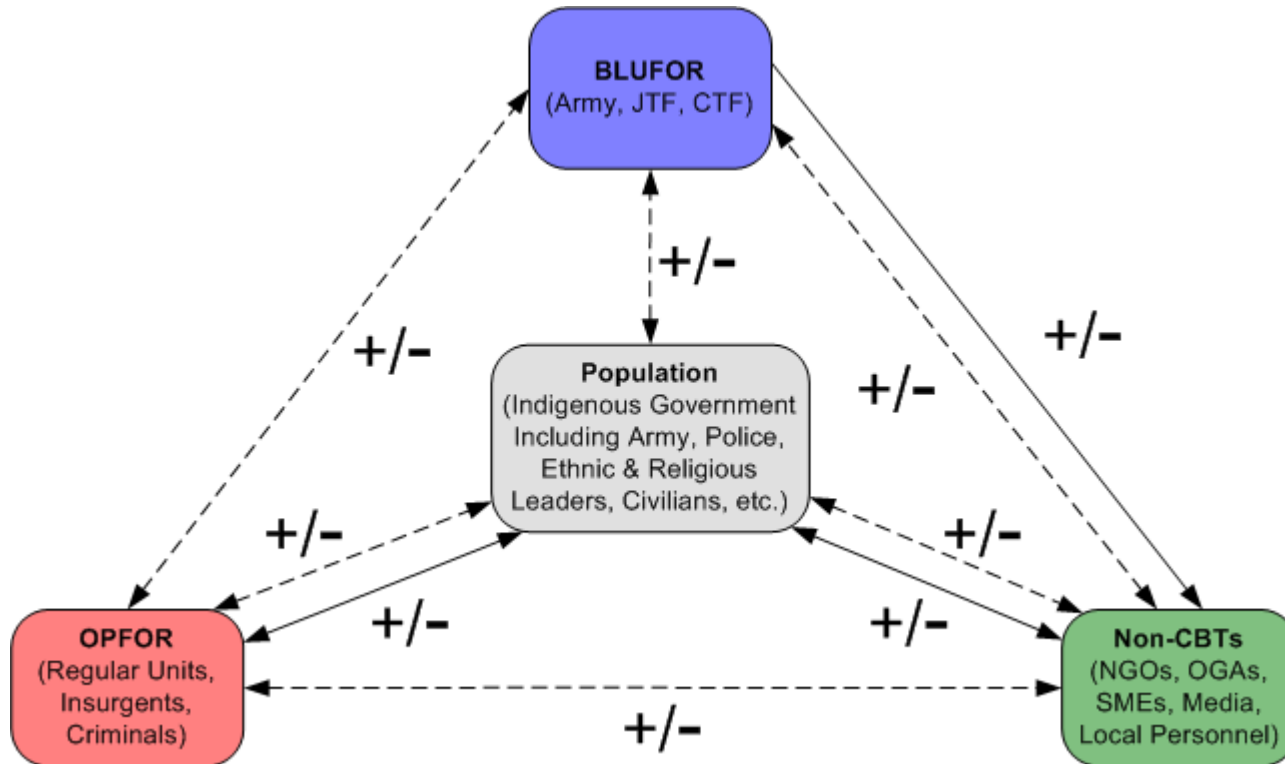
Influence Diagram Supporting the Implementation of Adaptive Campaigning

Daniel Bilusich, Fred Bowden and Svetoslav Gaidow,
 Proceedings of The 28th International Conference of The Systems Dynamics Society,
 Seoul, Korea, July 25-29 2010.

Essential Tasks and Events AC ID



Actors AC ID



Forming a Coherent Operational Approach

Understand approaches of other parties

Combine IDs of approaches to find gaps, inconsistencies and common approaches

Understand the differences in approaches

Everyone understands all the approaches



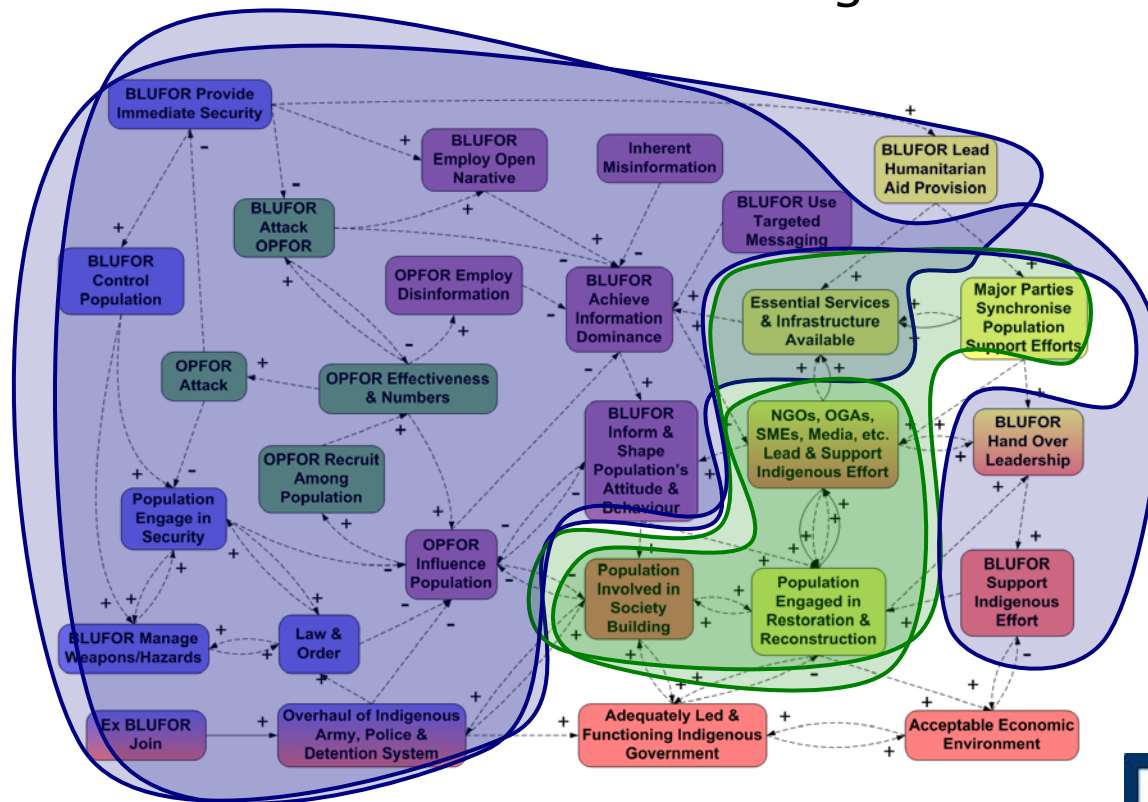
Distribution of Roles

Clear definition of roles to different players

Reduces chances of duplication

Ensure right elements are contributing to the right aspects

Understand how each element is contributing to the overall objective



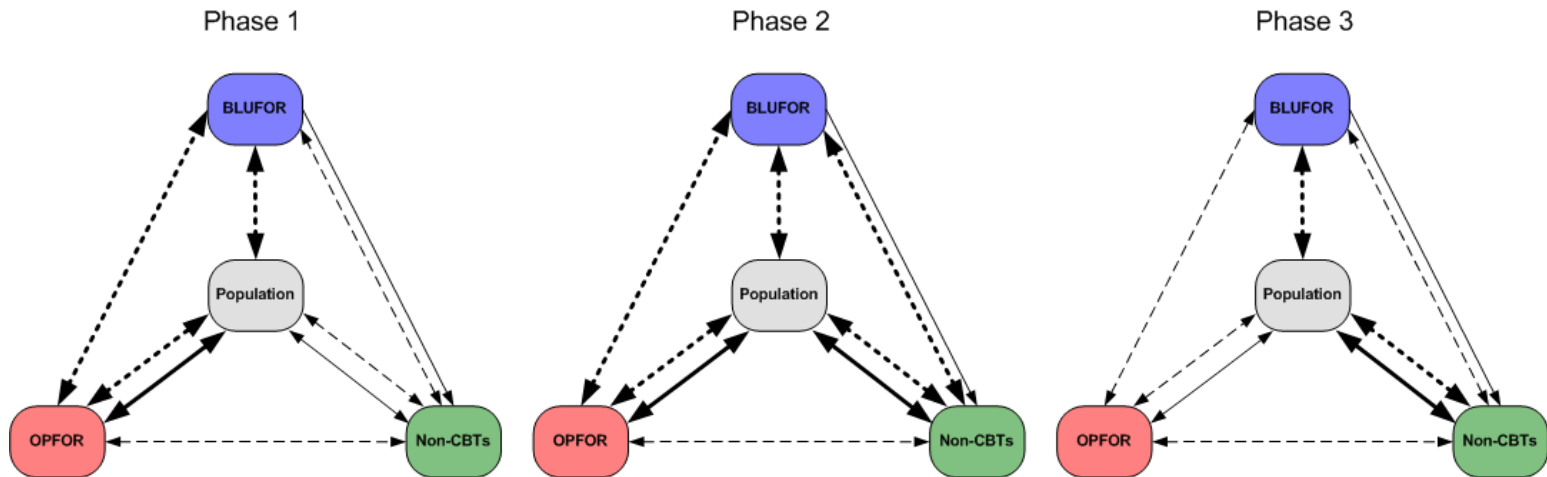
Determination of Interactions Between Actors

Clearly identify key interactions

Determination of level of interactions required

Understand and predict changes in relationships as the operation evolves

Identify civil military interactions



In Summary

There are some considerations when using IDs:

- Language barriers in interpretation
- Determining the right level of detail
- Subjective nature of the analysis
- No explicit indication of the level of detail covered by the model

The benefits of utilising IDs within to Support Collective C2 in Multinational Civil-Military Operations are:

- Compatible, complementary and suitable contributions
- Assignment of roles based on capability
- Better integration of effort
- Synchronisation and orchestration
- Visualisation to commander's intent
- Understanding of roles and changes with the evolving situation
- Understanding of interfaces between actors and their evolution

UNCLASSIFIED



Australian Government

Department of Defence

Defence Science and
Technology Organisation

Questions

UNCLASSIFIED

DSTO