The PRECiS Environment
Pacifica Small-scale NEO Scenario

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This scenario relates to the development of plans for Non-combatant Evacuation Operations (NEOs) relative to Pacifica. Though this scenario is completely fictitious, the objectives, issues addressed, and underlying data are intended to be sufficiently realistic for the research.

NEOs are undertaken to provide rapid response to a variety of circumstances, including natural disasters, requiring the evacuation of civilians from trouble zones. NEO operations are often characterized by the need for rapid deployment of equipment and personnel, often involving multiple military and civil aid agencies, to ensure the timely availability of effective aid. Crisis action planning procedures are used by the US Joint Planning and Execution Community for such circumstances [AFSC 1991].

The Pacifica Non-combatant Evacuation Operations Scenario (Pacifica-NEO) is being used to demonstrate various concepts related to reactive execution of plans and to test the thesis described in [Reece 1992]. The O--Plan2 Architecture, described in [Tate *et al*, 1992, Tate *et al,* 1993], is used to generate plans to achieve the tasks required by the Pacifica-NEO.

1 Pacifica NEO Background

Recently, civil unrest has broken out in Pacifica. Rebel forces have taken over radio and television stations in Barnacle, Calypso, and the capital Delta. All modes of transportation have been disrupted including most major roads, railways, and airports. However, reports show that one airport in Pacifica, located in the capital Delta, is still under government control at this time.

The U.S. Embassy in Delta reports that 250 American Nationals are presently in the country in addition to 20 non-essential Embassy personnel. 75 Agroforestry specialists are located in the Abysian Forest just outside of the city of Abyss, 108 World Health Organization (WHO) volunteers are located at Calypso, and 67 American University students at Barnacle on the West coast.

The Agroforestry specialists report that they have transportation available for 25 and thus, will require 50 to be transported by other means. The WHO volunteers have transportation for 30 and the students have no transportation. Thus, the problem which must be addressed in the Pacifica-NEO is that American Nationals are located throughout Pacifica and must be extracted (airlifted) out of the country due to the civil unrest.

The base for this operation has been selected to be in City-K, Country-X for its geographical location and onsite resources which are required to handle all aspects of the extraction operation.

Initially, both the C5 and B747 along with the ground transports are located in City-K, Country-X. From this initial situation, as well as the data provided elsewhere in this document, a plan is developed which moves the required resources from City-K, Country-X to Delta, Pacifica, then transports American Nationals via ground transports from their present locations to Delta as the Point-of-Embarkation (POE) for the evacuees and finally, airlifts all Nationals and non-essential embassy personnel to City-K, Country-X. The recovery of aircraft and ground transports airlifted to Pacifica must also be completed at the end of the operation.

A range of operational problems will occur during the execution of the mission involving:

- Delays of ground transports due to burst tires,
- Lack of fuel in required resources or running out of fuel,
- Natural disasters closing roads (volcanic activity)
- Access to cities blocked,
- etc.

References

[AFSC 1991] Department of Defense; Armed Forces Staff College (AFSC) (1991). *The Joint Staff Officer's Guide*, AFSC Publication 1.

[Reece 1992] Reece, G. A. (1992). *Reactive Execution in a Command, Planning, and Control Environment*. Technical Report 121, Department of Artificial Intelligence, University of Edinburgh, Scotland.

[Tate *et al*, 1992] Tate, A., Drabble, B. and Kirby, R. (1992). *Spacecraft Command and Control Using AI Planning Techniques -- The O-Plan2 Project -- Final Report*. Technical Report, USAF Rome Laboratory, RL-TR-92-217. Also AIAI-TR-109, University of Edinburgh, Scotland.

[Tate *et al*, 1993] Tate, A., Drabble, B. and Kirby, R. (1993). *O-Plan2: An Open Architecture for Command, Planning, and Control*. In Fox, M. and Zweben, M., (eds.), *Intelligent Scheduling*. Morgan Kaufmann.