Given a scenario which poses a problem, provide a feasible and effective solution to the problem. The scenario descriptions are both broad and vague; in other words, much the way such scenarios occur in real life. You will be expected to make assumptions – which you state and justify – in order to develop your solution to the scenario problem.

You are not expected to provide an implementation of the solution you propose. You are expected to:

1. produce a written final report: (i) identifying what you see as the key elements of the problem scenario, (ii) describing the nature of the solution you propose, both overall and specifically addressing the elements in (i). The description should be reasonably thorough, and may need to include hardware, software and personnel needed for both initial development and implementation, and for on-going operation. Include rationale for choices you make, e.g., do you buy COTS† or custom? You may also need to discuss infrastructure or logistics issues, e.g., transportation of equipment or personnel, licensing rights, etc).

A complete description will also include cost estimates, both for initial deployment and for on-going operation. The costs only have to be reasonable for what they are; in a project management course you might need to defend your costs, but here, so long as the costs aren't wildly wrong, you'll have met expectations.

2. provide a brief (not more than 10 minutes) presentation of your solution using NEW (so that everyone in the course can watch)

3. hold at least two meetings during the semester with me to review progress on the project; these meetings occur during my office hours, or by appointment.

The project is worth 30% of the final grade, divided as: 15 points for (1), 10 points for (2) and 5 points for (3).

You may work individually or in teams of not more than three members. If the team size is more than one, it must be clear in the work you present who contributed what.

This is not a course in project management, so the points awarded to project reports and presentation are primarily based on technical accuracy, how well thought-out the proposed solution is, and how feasible its implementation.

Students must commit in writing to either of Plan ‘A’ or Plan ‘B’ by midnight, 21 Feb, 2005 (i.e., send me email). Recall from the first lecture that the choice of plan affects how your final grade is computed, and whether you have the option of doing extra-credit work. Any student who has not opted for a project plan by the deadline is automatically assigned to Plan ‘A’ (not subject to change thereafter).

The Project Scenarios

Students taking this project option pick one of the two scenarios below.

(1) Airport Travel Assistant

The goal is to provide a traveler who has an e-ticket arriving at a major airport (e.g., Dulles) with information about how to check in for their flight, from which gate the flight departs, how to travel from the

† COTS: “consumer off-the-shelf,” i.e., no special hardware or software beyond what can be easily obtained by any-one.
doorway where the passenger entered the airport to the gate for their flight. The passenger should receive any updates concerning gate changes, equipment changes that require re-issuing of boarding passes, delays and cancellations. That is, the passenger should have complete and up-to-date information at all times, anywhere in the airport.

On the other side of things, the airline should receive confirmation of the arrival at the airport of a ticketed passenger. And if the airlines can have that information, you can be sure that others, e.g., the TAS, want it as well.

An essential part of this project is how you organize the service so that it will gain acceptance with airports and airlines (and whoever else): if your solution requires major new equipment and/or software upgrades, then the likelihood of acceptance is low. If you do this with minimal disruption or change to infrastructure, then chances of acceptance are much higher.

One of the security issues you need to deal with is how to issue to the passenger something that they can present for verification at inspection points (like, e.g., when queueing for the X-ray screening). Currently this requires a passenger to show some photo-id and a boarding pass. In this scenario the user may not have a boarding pass per se; what secure mechanism do you provide as an alternative?

(2) Tsunami Information System

The December 26th tsunami in southeast Asia killed 170,000 people and destroyed the infrastructure of civilization – towns, roads, electric grids, telecommunications systems – in many countries, affecting millions of people. International relief efforts began immediately, involving government agencies (primarily military) and non-government organizations (NGOs, e.g., Medecins sans Frontières, among the first groups on scene).

A significant logistical problem encountered when trying to coordinate activities of relief agencies is access to current information about the status of different locations, e.g., what agency is present, who is en-route, what supplies are needed, when do they arrive, etc. The Internet provides a rich infrastructure (technology, tools, applications) ideally suited to the dissemination of this kind of information, but relies on other infrastructural elements (electrical power, telecommunications) wiped out by the tsunami.

In this project scenario you have been appointed to implement and operate an Internet-based coordination system for use by all involved in the relief effort. You have to determine where you will situate any centralized resources you need, e.g., server(s), and how users in now-ravaged remote locations can use your service. While people “on the ground” in the area appreciate the value of the service you will provide, their primary goal is direct relief action, i.e., you cannot expect much in the way of human resources from relief agency personnel (NGO or other).

Naturally, people want this service up and running as soon as possible. The overall objective of the service is to provide to a relief worker who can access it information about location of other relief groups, supplies, and, to be able to report information so the data in the service remains current.

You must provide a realistic plan for how you will establish and operate this service. Things you need to address include (but are not limited to): physical location, equipment choice, services to provide and when (i.e., not all services may start at the same time).