

APPENDIX C:

Dataquest/ITS Questionnaire

This questionnaire was used by Dataquest and ITS as a preparatory tool before the on-site visit and interview with the companies being surveyed.

Dataquest/ITS Questionnaire

The following background information prepared by ITS and Dataquest Incorporated, was used as a preparatory tool before the on-site visit and interview with the companies being interviewed.

SITE VISITS

BACKGROUND

The extent of the telecommunications industry's dependence on foreign sources for raw materials, components, parts, and equipment is a key area of concern in evaluating the industry's ability to maintain service and production capabilities and to accommodate increased service and equipment demands under mobilization conditions. The Joint Industry-Government Telecommunications Industry Mobilization (TIM) Group was established by the President's National Security Telecommunications Advisory Committee (NSTAC) and the National Communications System (NCS) Committee of Principals (COP) to: (1) identify possible impediments to effective telecommunications industry mobilization and (2) assist in the development of corrective actions to overcome any identified impediments. The report entitled *Final Report of the Joint Industry-Government Telecommunications Industry Mobilization (TIM) Group*, documents the Joint Group's final findings, conclusions, and recommendations regarding the industry's overall dependence on foreign sources. The material from that report serves as background material for this paper.

The driving force behind this study is mobilization, defined as the process of marshalling those telecommunications resources needed to make the transition from a normal state to a state of readiness for war or other national emergency.

Using the work of earlier NSTAC TIM Task Force as a starting point, the Joint TIM Group sought information from Federal Government and private research organizations that had previously studied the issue of foreign procurement or foreign dependence. The Group focused initially on the telecommunications industry's dependence on foreign-sourced semiconductors, providing recommendations on semiconductor dependency to the NSTAC in February 1987 and to the COP in March 1987. The subsequent focus of the Group's study was equipment, materials, and components other than semiconductors. It was determined by the NSTAC that semiconductors were a problem area based on DOC and National Defense University data. A survey of NSTAC member companies was conducted to support this aspect of the study. The Dependence on Foreign Sources Survey was designed to elicit the views of NSTAC companies concerning their own, as well as the industry's dependence on foreign sources for materials, equipment, and components other than semiconductors. The survey focused on four major types of equipment: digital central office switching equipment, fiber optic

electronic terminal equipment, telephone sets, and satellite ground stations. Nineteen NSTAC companies provided responses to the survey.

On the basis of the survey results and other information obtained from the literature, briefings, and consultation with experts in the Federal Government and the private sector, the Joint TIM Group developed its findings, conclusions, and recommendations.

The increasing dependence of the telecommunications industry on foreign sources raises significant questions about the industry's ability to respond to and sustain mobilization requirements. On the basis of briefings received, reports reviewed, and responses to the NSTAC Dependence on Foreign Sources Survey, the Joint TIM Group has reached the following conclusions concerning equipment, materials, and components other than semiconductors:

- (a) In the Short Term and Mid-Term, the service sector of the U.S. telecommunications industry would not be immediately or severely affected by disruption of the supply of foreign items. Adverse effects would be felt as foreign equipment fails or requires repair parts.
- (b) The manufacturing sector of the U.S. telecommunications industry could be immediately affected by a cut-off of critical foreign-sourced supplies, equipment, or materials. The effects on production would depend, in part, on the quantities of foreign-sourced items in domestic inventories and in the supply pipeline.
- (c) The U.S. industry's foreign dependence presents a changing picture in terms of the specific equipment, components, and materials for which dependency exists as well as the degree of dependence for each. Today's list of foreign dependence items is different from last year's, and next year's will differ from today's. The following conclusions and observations reflect the current picture as drawn by the NSTAC Foreign Dependence Survey and related studies in their 1987 report:
 - In view of the large number of foreign-made optic terminals embedded in U.S. telecommunications systems (about 35 percent foreign according to some estimates) and the inherent incompatibility between terminals made by different manufacturers, the foreign-made terminals and their interfacing connectors could become a problem if maintenance or expanded capacity is required.
 - The U.S. currently imports over 60 percent of the telephone sets it uses. Although the demand for telephone sets during mobilization is not known, the fact that imports have risen to this level suggests that telephone sets could be a problem during mobilization. Therefore, the Joint TIM Group concluded that domestic production and imports status of telephone sets should be periodically monitored.
 - The foreign dependence status of the ceramic resonators should be studied in depth, with a view toward identifying possible steps to reduce the degree of foreign dependence. The availability status of four other critical items--fiber

optic terminals, fiber optic connectors, telephone sets, and ferrite cores should be periodically monitored for the same purpose.

Further, on the basis of its collective assessment of the responses to the NSTAC-wide Dependence on Foreign Sources survey, the Joint Group has identified other dependencies of concern from a mobilization perspective. While these dependencies may not have the same wide-ranging significance to the telecommunications industry as semiconductor dependency, they are important. Accordingly, the Joint TIM Group offers the following recommendations:

- The Government, in conjunction with NSTAC, should establish a mechanism to periodically assess industry dependence on foreign sources in light of identified Government mobilization needs.
- The NCS and NSTAC should jointly keep the Executive Office of the President (EOP) apprised of any specific foreign dependency issues relating to telecommunications, and identify, if necessary, possible measures for reducing or mitigating these foreign dependencies.
- In conjunction with the above Government action, the NSTAC member firms should ensure that their appropriate internal organizations are made aware of the findings of the joint TIM Group. Further, their internal organizations should be apprised of the need to plan for contingencies such as cut-off of non-North American supplied material during a mobilization.

Foreign Dependence Defined

For the purpose of this study, foreign-sourced items are those manufactured, assembled, or otherwise processed outside of the United States and Canada. Sources within these countries are referred to as North American sources. The distinguishment should be noted between the issue of dependence on foreign sources and the broader, more inclusive issue of procurement from foreign sources.

Foreign source procurement does not necessarily equate to foreign source dependence and involves consideration of a range of trade, economic, national security, and foreign relations issues that are beyond the scope of the objectives. The Joint TIM Group has focused on the narrower issue of the industry's dependence on foreign sources and the implications of any dependencies for effective industry mobilization. In its study, the Joint Group has recognized that concerns about foreign source dependency grow out of the possibility that foreign sources of supply could be cut off under a variety of mobilization conditions. The Group has thus assumed, for purposes of its general investigation, that a cut-off of foreign supplies would occur coincident with the beginning of mobilization.

Mobilization Defined

The Joint TIM Group has built upon the earlier work of the NSTAC TIM Task Force, working with the following definition of mobilization:

The process of marshalling those telecommunications resources needed to make the transition from a normal state to a state of readiness for war or other national emergency.

Mobilization is considered to encompass the interval from peacetime/disaster/crisis through any subsequent conventional military actions external to the continental United States. The impact on the telecommunications industry of a nuclear attack upon the United States was judged by the Group to be outside the scope of its study. The following mobilization time periods are being used for the purpose of analyses:

- (1) Pre-Mobilization: Planning and Pre-Positioning
- (2) Short-Term: 0 to 90 Days (Reallocation and Reprioritization of Existing Capability and Service)
- (3) Mid-Term: 90 to 180 Days (Reallocation and Reprioritization of Products and Services in the Pipeline)
- (4) Long-Term: Over 180 Days (Expanded Production of Capacity and Services)

In its study of foreign source dependency, the Joint TIM Group assumed that a cut-off of foreign supplies would occur coincident with the beginning of mobilization.

The overall objective concerning dependence on foreign sources reflect the provisions of the TIM Implementation Measure in the NCS's NSEP Telecommunications Plan of Action (NTPA), calling for:

- The identification of possible impediments to effective telecommunications industry mobilization and mobilization planning and the recommendation of corrective actions, and
- The identification and recommendation of any Federal Government actions needed to support telecommunications industry mobilization planning activities.

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The reports to date do not address the impact of foreign products and services on the U.S. telecommunications industry, and this nations telecommunications infrastructure. Recommendations of the report were generally focused on the planning and response to infrastructure issues related to domestic suppliers. No specificity accompanied the identification of the "manufacturing" infrastructure system. It is clear that reliance on foreign suppliers must be considered in any analysis of U.S. telecommunications

mobilization. The work from ITS will focus on the bearing of foreign telecommunications and information products and services on the U. S . telecommunications industry and infrastructure. Hardware and software products, systems, and networks will be surveyed and addressed. Specifically ITS will:

- Survey of foreign telecommunications and information products and services which impact the U.S. telecommunications industry and the U.S. infrastructure.
- Analysis of those categories of foreign-supplied items which most affect U.S. mobilization.
- Design of assessment mechanism to define the degree of U.S. dependence on foreign sources.
- Initial evaluation and documentation of assessment mechanism.

CURRENT PROJECT PROGRESS

ITS has developed a preliminary plan for completing the tasking described above. The plan is briefly outlined in the report entitled An Assessment of the U.S. Telecommunications Industry Dependence on Foreign Sources as it Impacts the U.S. Telecommunications Infrastructure (attached). The study will be completed in three phases:

Phase I—Systems Level Analysis

Phase II—Component Level Analysis

Phase III—Identification and Prioritization of Vulnerabilities

Each phase is further detailed as follows:

Phase I—Systems Level Analysis. Each major telecommunications system or group of systems will be analyzed to determine the amount of production within the U.S., the imported quantities, the exported quantities, and the U.S. consumption. When significant portions of the U.S. consumption come from foreign sources, that case will be flagged as a possible problem area. An attempt will be made to isolate specific equipment types from the groupings to identify individual equipments that come primarily (e.g., greater than 50%) from foreign sources.

Phase II—Component Level Analysis. The focus of this effort will be to identify specific components that come primarily from foreign sources. Systems identified in Phase I will obviously use many of these components, however many of the target components will be used in systems manufactured in the U.S.

Phase III—Identification and Prioritization of Vulnerabilities. After the vulnerabilities have been identified, solutions will be developed to cover the vulnerabilities, as required.

Currently, ITS is involved in Phase II as Phase I is complete. The goal of ITS is to identify the systems components of systems identified in Phase I through the interaction with a of the major switching equipment manufacturers. This will be a pilot program which depending upon its success will be continued to other manufacturers either through a face-to-face visit or through a survey built upon the findings of the pilot visits.

POSSIBLE ACTIONS FOR COMPANY VISIT

1. Mail ahead of time, a background briefing and questionnaire for Company's familiarity.
2. Briefly but thoroughly present the background explaining Who, What, and Why through the use of the slides.
3. Contact the Company representative who participated in the Joint TIM Group to determine his potential participation in the site visit. He may have ideas that save us much time and provide us with contacts and sources of information.
4. Has this study been verified or evaluated using Gulf War mobilization effort? If so, has Company participated in the evaluation?

IDEAS IN PREPARATION FOR THE COMPANY SITE VISIT

1. Identify or categorize the equipment staying close to the predefined categories in previous reports.
2. Define dependance (see Background above).
3. Get suggestions from Company on the best way to break down their system.
4. We should be sensitive to concerns about proprietary information in formatting the questions and results.
5. Are we only addressing hardware or do we include areas such as engineering?
6. We are looking for quantitative information versus the general effectual type of information requested earlier.

POTENTIAL QUESTIONS FOR COMPANY VISIT MANUFACTURING

Manufacturing encompasses the design, making, and assembly of components and subassemblies...

Design of Components and Subassemblies

1. Of the components and subassemblies under consideration what percentage are manufactured by foreign sources?
2. What percentage of those components in (1) above are manufactured by multiple sources?
3. In your estimation, what percentage of components and subassemblies are designed by foreign sources?
4. In your estimation, how would the unavailability of foreign component and subassembly design affect your company's ability to continue to produce, operate, maintain or integrate the switch equipment under consideration?

Making of Components

Assembly of Component into Subassemblies

SHIPPING

MARKETING

Just-in-time policy

Warehousing policy

Warehousing locations

Lead-time requirements

Multiple sources for same or interoperable products