1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
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Figure 1 is a resolution test chart. It consists of a central vertical column of 10 small test patterns, each labeled with a number. To the left of this column are two larger test patterns labeled 1.0 and 1.1. To the right are four more test patterns labeled 2.8, 2.2, 2.0, and 1.8. At the bottom are two more large test patterns labeled 1.25 and 1.4. Each test pattern is composed of a set of five parallel lines (three horizontal, two vertical) and a numerical value. The numbers are: 1.0, 1.1, 1.25, 1.4, 1.8, 2.0, 2.2, 2.8, 4.0, 4.5, 5.0, 5.6, 6.3, 7.1, 8.0, 9.0, 10, 11.2, 12.5, 14, 16, 18, 20, 22.5, 25, 28, 32, 36, 40, 45, 50, 56, 63, 71, 80, 90, 100.

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24 March 1994

Shirley Lindsay
University of California
Los Alamos National Laboratory
P. O. Box 1663 M/S F668
Los Alamos, NM 87545

Dear Ms Lindsay,

This is our eleventh report for this period and the final report for contract 9-XG2-D9946-1. This report is for activity during the period February through 14 March 1994.

The Synthetic Theater of War program, under the leadership of the Advanced Distributed Simulation Office, was redesignated a probationary Advanced Concept Technology Demonstration by the Office of the Secretary of Defense. This new designation makes the STOW program, and the enabling technology developments, one of only six major technology thrusts being supported by the Defense Research and Development organization. Support to this technology area, has been, and will continue to be a major thrust for this contract and the follow-on contract.

Over the extended period of this contract we have supported a major experimental series, the Counter Target Acquisition System (CTAS), and initiated support and development effort for STOW-97 and participated in ongoing series of experiments known as the SAFAGANZA. These efforts have seen the development of significant experiment support and analysis tools, i.e. the integration of head-eye tracking to manned tactical simulation and the Simulyzer analysis system. Recently, we have initiated the development of a customized data base analysis tool to enable analysis supporting selection of communications bandwidth reduction designs and concepts. This is in direct support of the STOW effort and intrinsic to the SAFAGANZA experiments.

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The details of these activities have been chronicled in the monthly reports and the "Tracker" reports which provide additional details of efforts associated with the primary technical areas, synthetic forces and scaleability.

Sincerely,

L. S. Kollmorgen

Attachments: Invoice 6-94
 Tracking Report 2-94

DISCLAIMER

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6 March 1994

PROJECT TRACKER 2-94

SUMMARY:

- SIGNIFICANT EVENTS;
 - SEEDs 1-3 Completed
 - HYDY Revised
 - NRaD Execution Plan for Scaleability Reviewed
 - Revised PAD Structure
 - HIFIN (GAC) Reviewed
- SCHEDULE: Next Major Event is;
 - SEED #4
 - MID-YEAR REVIEW 3/10
- FINANCIAL: COMMITMENTS
 - WE ARE CATCHING-UP FROM BEHIND !!!
- PROGRAMMATIC:
 - Overall SAF Development Strategy Approved
- MEETINGS/TRAVEL:
 - 3/9 Mid-Year Review
 - 3/16 or 18 BBS Program Review (See Below)
 - STOW-E IPR week of 3/21
- MEETINGS TO BE SCHEDULED:
 - Sked Meeting with AFOTEC/PMA-248 for HYDY Phase III

CORE TECHNOLOGY
A. SYNTHETIC FORCES

1.) GENERAL

- Activity;
 - Overall program strategy for execution and rationalized estimates of anticipated objective forces delivered to support STOW-97 essentially complete.
 - Of growing interest and concern is how to handle the inter-relationships of the three core technologies, SAF, Scaleability, Phenomenology.
- ACTION required/pending;
 - Dennis has taken lead to establish series of working meetings amongst the PMs and principal supporters to establish recommended coordination approach.

2.) MODSAF 1.0 COMPLETION

- Activity;
 - MODSAF 1.0 completion strategy adopted. Next major milestone is the delivery of 1.X end of March for BBSaiu support.
- ACTION; required/pending;
 - Post the mid-year review - recommend take a step back and see what has been contracted for with relationship to the three overlapping rings and, importantly, what are the targets for STOW-97 support.

3.) AFOR

- Activity;
 - Overall strategy to be briefed at mid-year. Key requirement post that review is having kick-off meetings with major performers and establishing a modus-operandi to maintain momentum. Note this is where the bi-weekly reporting system will come into play.
- ACTION: required/pending;
 - Need to schedule a progress review for CCSIL.
 - Same for C2

4.) NAVYSAF (NRaD Lead)

- Activity;
 - Mid-year review next event. Assume convergence NRaD with Washington strategy occurred as result meetings on 28th.
- ACTION: required/pending;
 - Schedule progress review.

5.) AIRSAF (ARPA PM Lead)

- Activity;
 - Mid-year review next event.
 - Key is finalizing AIRSAF plans with B/G Cambell. We have not had opportunity to debrief status.
 - ACTION: required/pending;
 - Need to establish the AIRSAF development strategy. Who is going to be the agent, who will be the lead developer, etc, etc.
- 6.) MARINE CORPS SAF.
- Activity;
 - Mid-year review is next event. Strategy has been approved.
 - ACTION: required/pending;
 - Schedule progress review.

B. SCALEABILITY

1.) Real(Live)/Virtual (NRaD Agent)

- Activity;
 - Dollars re-scrubbed by Tiernan, Kollmorgen to ensure executability of SAFAGANZA and STOW-E. Will need to redo again in late March or early April. There is still flexibility but that flexibility is developing more than one claimant. This inter-relates with the three ring problem. Pushing for a multiple use SAF alpha/beta site tied to the scaleability testbed.
 - Tom and Lee have discuss the NRaD team(s) to execute HYDY, SAFAGANZA, MCTB and STOW-E which have non-trivial overlap. Tom has had to do some re-think. Need to provide for continuity - but also capable leadership. Should discuss when have the BBS IPR meeting (see below).
 - Safaganza revised is more of a challenge. Kevin taken lead.
 - Feature of the revised PAD structure is to have a Technology PAD. Have created a Communication and Data Flow Technology program for review at mid-year. This program has the bulk of the generic and transparent sophistication efforts imbedded for both AIU and bandwidth reduction devices efforts. Need to see how it sorts out.

2.) Constructive/Virtual (NRaD Agent)

- Activity;
 - BBS
 - Have discussed the urgent need for a review of the program execution strategy with Tom and Dennis. Dennis desires to have a pre-IPR meeting prior to his engaging with the alternatives. Agree

this should be done soon. Nearest opportunity is 16th at Orlando or 18th at San Diego. Need Tom's input ASAP. Dennis' schedule has him in Orlando area (Atlanta on the 15th) and also San Diego (Gen Sutton on 17th at 29 Palms).

- Have requested that TOM use the end of this past week 2-4 to dig into MODSAF 1.0 and determine the level of effort anticipated to develop a BBSaiu based on MODSAF 1.0.

- Still need meeting twixt NRaD and LADS at the both the PM and the engineering level to ensure that everyone is on the same sheet of music.

- ACTION ; required/pending.
 - IPR on BBS asap.

3.) SCALEABILITY (NRaD Agent.)

- Activity;

- Safaganza SEED exercises have been very useful for the participants. Learning about the limitations of the DSI and shaking out the hardware. We haven't learned much about the scaling problem yet - but we are gaining insights as to real packet generation rates.

- Last drill on 2/3 went smoother than any before. This was on a double T1 backbone configuration. Do not believe that had any effect. Believe having an agent at the CSC (Perri-anne) likely helped. Plus the troops are coming up the learning curve.

- Requested Kevin to get ahead of the power curve and generate a project schedule which includes getting the key groups together. Do not have much time - the principal deliverables from this project are: a solution for STOW-E, and a preliminary bandwidth reduction technique evaluation. As soon as Kevin is ready - we get together. Hopefully, this week.

- Held kick-off at NRL for the multi-purpose testbed. Went well. BAA looks good and copy given to Dr Frank. But on vacation. Next step is getting a program brief together for coordination with STOW Team, JPO and 7th floor. Meeting Tuesday (8) between program slide crises.

- ACTION ; required/pending.
 - None.

4.) DISPLAY/DEBRIEF (NRL Agent/SARNOFF principal performer)

- Activity;
 - Cyberview development included in 29 Palms MCTB.

- ACTION (required/pending)
 - None.

5.) LOW COST CIG

- Activity;
 - Need to discuss the low-cost CIG initiative again.
- ACTION (required/pending)
 - Waiting

C. APPLICATIONS

1.) HYDY; (NRaD Agent)

- Activity:
 - Requested Randy to put together a revised schedule and have meeting with Mugu. The weekly reports indicate some progress - but want to see a hard copy of the schedule proposed. Tom please nudge.
 - Still need to get together with the most appropriate and easiest to bring to fruition Phase III funding source.
- ACTION (required/pending);
 - Set-up meetings and strategy for Phase III

2.) - WISSARD (NRaD Agent/BMH on site Coordinator)

- Activity;
 - Review latest BMH weekly real time.
- ACTION: (Required/pending);
 - Wissard Site Plan Meeting

3.) HIFIN

- Activity;
 - Reviewed the program at GAC on the 1st. Tight little team has made good progress - ahead of schedule and below cost. Using available time and effort to go further than proposed. Current effort will complete 4/15. Team will be disbanded if dollars are not in the mill (real) before then.
 - The dollar cost to complete - if government supplies the SGI hosts (two-three) is well under the latest estimate (which has also gone down to 580K).
 - Need to get the fleet (Purser/et al) to justify the utility.
 - Sending BMH the program charts and requesting BMH have informal demo asap.

-- Need funding in order to push the delivery schedule which is too slow. But there are work arounds. GAC needs interactive direction to revise the options.

- ACTION (Required/pending);

- Get funding squared away and a funding strategy (i.e. vehicle).

D. RELATED EFFORTS.

1.) UNDERSEA EFFORT

- Activity;

- Coordination with MSTO - need feedback.

- ACTION; required/pending:

- None

2.) COUNTER-DRUG.

- Activity;

- Trucking.

- ACTION ; required/pending.

- Nothing being tracked.

E. ADMINISTRATIVE.

- SANTA FE INSTITUTE. Approved. Dollars on the way. Mike had the news. Dennis needs to call Ed Knapp/Mike with the details.

- ONR/NAVY Initiatives.

- Need feedback. We are out of sync here.

DATE

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9 / 8 / 94

END