

Title: Minutes of EARN-IXI Project Group Meeting on 12 Sep 1990
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Latest versions of documents are available from LISTSERV at UKACRL.

Participants:

Peter Chiu	RAL
Paul Bryant	RAL
D.Jennings	UCD
P.Sylvester	GMD Bonn
D.Dumas	EARN-France
J-P.Sauter	CNUSC
M.Pallares	IXI-PT
E-J.Bos	SURFnet
M.Sommani	CNUCE
P.Prinsen	DEC
H.Deckers	EARN Office - Chair
D.Bovio	EARN Office
W.Schumann	EARN Office
N.O'Reilly	EARN OSI Centre
J.Striplin	EARN OSI Centre
Claude Saive	CIRCE

0. Introductions and Announcements

Hans Deckers opened the meeting and welcomed the participants.
 He stated that an important aim of this meeting is to define a complete set of tests and criteria for success from which Niall O'Reilly would be able to compile EARN-IXI DOC90-13 which is to contain these data.
 Niall and Daniele Bovio are to work together on the development of EARN-IXI DOC90-17 page # of 7

the testing plan.

1. Agreement of Agenda
2. Terms of Reference (EXEC72 90)
3. Review of Action List (EARN-IXI DOC90-16)

Previous action list:

Date added	Description etc	By	Status
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1990-06-22	develop interfaces between EARN-IXI and IXI-PT.	HRD	Ongoing
1990-06-22	Formalise logging of problems so that summary can go to EARN management and from there to IXI-CC. Exported to project planning	NOR/DB	
1990-06-22	Ask country directors for project members.	HRD	Done
1990-06-22	Put Maria Pallares on management list	HRD	Done
1990-06-22	Provide description of all GBOX nodes and their communications environment	NOR	Ongoing
1990-06-22	Provide description of all EBOX nodes and their communications environment	DB	DOC 90-11
1990-06-22	Relay request to move IXI access point from CWI to EOC. New action--report to EXEC D. Jennings	MP	Done
1990-06-22	Develop schedule for E-, G- box interoperability testing.	NOR/DB	Not done
1990-06-22	Establish manpower needs for meeting schedule established at meeting, and establish what manpower is available.	NOR/DB	Closed
1990-06-22	Identify lead sites	NOR/DB	DOC 90-10
1990-06-22	Identify and document information dissemination mechanism.	HRD	Done
1990-06-22	Document operational procedures for G- and E- boxes respectively. made into work item	NOR/DB	Off list
1990-07-04	Draft letter for EARN Office (HRD) requesting this change.	NOR	Done (WS)
1990-08-20	Status of minutes of EARN-IXI DOC90-8 -- should be NOG paper ?	PEB/HRD	Open
1990-08-20	Upgrade GBGBOX to VMS 5.3-1 from 5.1	PC/NOR	Done

1990-08-20	Change GBGBOX to DECnet area 63	PC/NOR	Done
1990-08-20	Apply VOTS patches to GBGBOX	PC/NOR	Done
1990-??-??	Upgrade IEGBOX to VMS 5.3-1 from 5.3	TW	Open
1990-??-??	Apply VOTS patches to IEGBOX	TW	Done
1990-??-??	Apply VOTS patches to NLGBOX	NOR	Done

[End of Action List]

4. EARN-IXI Project Proposal (EARN-IXI DOC90-10)

There was much discussion on the topic of service requirements. It was agreed that there is a need to establish specific test criteria.

Jerry Striplin put forth the suggestion that tests be organized as concerted efforts at all levels of the transmissions. He suggested that traces are done by all intervening networks in order to isolate and identify localized events and problems. The suggestion was debated. It was stated that the end-to-end test results were of the greatest importance, and that other testing occur on specific parts of the connection if the test criteria were not met.

The usefulness of benchmark testing was noted. Good benchmark data would give us a reference point in the ongoing process of running the network and adding traffic.

Dennis Jennings suggested a top-down approach to the development of the testing plan.

Maria pointed out the ever-present problem of intervening national networks. IXI sometimes serves only as a link between national networks which are directly connected to the source and destination of a file:

Specific modifications to the document were made.

Jerry Striplin pointed out that the document changes were significant enough to warrant a conference call among involved parties to insure that the changes were correctly inserted to the satisfaction of all.

Action: A conference call will take place for the purpose of crystallizing the EARN-IXI project proposal document 90-10. Call will be initiated by Jerry Striplin and will involved all concerned project members.

5. IXI Progress and Plan (report from IXI-PT)

Maria Pallares from IXI addressed some IXI issues concerning EARN. She mentioned the resolution of several problems that have occurred and indicated that there were no major problems outstanding with IXI service. The traffic has been building slowly and steadily, and the number of the segments in traffic has been increasing which indicates to her that the nature of the traffic is becoming more production traffic and less test traffic. She said that most of the optimization was being

performed for window size of seven and packet size of 1K bytes. She addressed the point that previous EARN test results with Gbox traffic that indicated substandard performance were due to the fact that small packet sizes of 128 and 256 bytes were used. It was acknowledged that the packet size was limited for it to be possible to move data, that this had an effect on performance, and that a more thorough examination of this is needed.

Action: Maria Pallares is charged with obtaining throughput data from IXI.

This throughput data is to be evaluated and compared with expected results and EARN needs and can serve in itself as a benchmark for against which future throughput tests may be compared. It is noted that the nature of IXI is quite different than that of a leased line with switches at each end. Other intervening traffic unrelated EARN is a constant (attempts could be made at testing during off-peak periods).

6. EARN-IXI IXI-PT Interfaces

Human interfaces were discussed here. It was confirmed that there are three major channels:

- Established IXI access point managers
- Maria Pallares, particularly in the case of test assistance
- EARN EXEC-IXI CC as an executive-level channel

It is encouraged that more than one person be enlisted as access point managers.

Paul Bryant sees a need for establishing formal methods for addressing problems that span several networks. It was argued that it is difficult to develop a standard method because of the differing natures of problems, that a formal procedure might involve some parties unnecessarily, and that procedures of contacting appropriate persons will develop by themselves as problems occur.

Data through IXI can be viewed as taking this path:

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                G/Ebox
    Local national network
                IXI
    Remote national network
                G/Ebox
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It was noted that this model should be kept in mind when a G/Ebox connection to IXI is discussed.

7. Protocol Definition (EARN-IXI DOC90-4)

Peter Sylvester presented his paper defining NJE/OSI. He discussed the issue of pacing indicating that many requested revisions have been made in the suppliers of the communication software. Implementation of the improved software is in process.

He is a TP0 advocate suggesting that flow control be performed at

levels higher than that of the transport layer.

The importance of this document was recognized among the group members. It helps to define the basis of this project from a technical standpoint.

8. Configuration Recommendations (EARN-IXI DOC90-12)

Paul Bryant presented his paper which recommends configuration parameters for nodes. He advocates packetsize and window size negotiation. It was noted that we should attempt a standardization of parameterization across the network.

9. IBM Progress and Plan (EARN-IXI DOC90-11)

Daniele Bovio presented his paper on Ebox testing. The paper was discussed briefly and no objections were raised.

10. VAX Progress and Plan (EARN-IXI DOC90-2, -7, -6)

Niall O'Reilly presented his paper describing Gbox nodes. Paul Bryant presented his paper recounting details of phase II testing. He pointed out that the paper could be of use in future Gbox testing. Paul then presented his paper on details of phase II testing. A discussion of testing ensued. It was agreed that if tests could be standardized, conducting further tests would be simplified, and the results could be more easily compared and would be more meaningful.

Action: Standardize tests and test output.
D. Bovio (Ebox) and N. O'Reilly (Gbox)

11. Interoperability Progress and Plan

Peter Sylvester emphasized the importance of interoperability testing. He believes in performing the interoperability tests early in the testing process as opposed to waiting for homogenous tests to complete.

Action: Interoperability tests shall be arranged within a few days.
P. Sylvester and N. O'Reilly

12. Miscellaneous Unaddressed Issues and Wrapup

A tentative testing schedule was created to give some order to the testing and to stimulate thought on future exigencies.

	Oct 1	Nov 1	Dec 1
NOR CHGBOX	0	I	II
RAL GB/NL/IEGBOX	II	III	
EOC NL/GB/IEGBOX	I	II	III
NOR FRMOP22/GMD/EOC	I	II	III
DB DBGMD21/CNUCEVM		II	III
DB DBGMD21/FRMOP22		III	IV

Initials in first column indicate assumed responsibility of testing.

The systems involved in the testing are indicated in the second column. Roman numerals indicate phase of tests. The position of the numerals with respect to the time line indicates the approximate completion dates of the indicated test phase.

An idea was put forth to list external events that will affect the how fast the tests can be performed.

External events affecting tests:

- Jnet OSI/NJE Version 2.01 deployment and testing
- VMS 5.3-1 upgrade
- VOTS patch 020
- Topology decisions
- Charge control
- Cost of CERN port
- Performance B/NK
- Window rotation problem

Dennis Jennings suggested some criteria for accepting IXI as a service provider for EARN traffic. They were read at the meeting and were presented as a starting point for developing more specific requirements. Exact numbers have been excluded from the minutes as the main emphasis was on listing requirements whose details would be decided upon after more thought and discussion.

Criteria for Acceptance of IXI for live NJE/OSI Traffic

Point to point links will be established WHEN both sites accept that:

1. The NJE/OSI link is stable and stays up for 9x% of the time under continuous NJE traffic load.
2. The NJE/OSI link failures create suitable alert messages at both sites
3. The NJE/OSI link can be brought up automatically after a link failure, or the link failure cause has been reported to each site within x hours.
4. The NJE/OSI link throughput is at least x% of the normal bandwidth in both directions at all times.
5. The NJE/OSI link provides constant interactive TELL messages with a round-trip time of less than x seconds.
6. NJE/OSI link failures due to IXI or other network failures are informed in less than x hours and causes reported to the EOC.
7. The local experts have satisfactory knowledge to technically support the link
8. The EOC and the EARN office has sufficient expertise to support the initial live traffic period.
9. The IXI service provider provides service level reports monthly on IXI line stability, problems addressed, and performance of the network.

It is clear that there are operational complexities involved. It unclear

what level of service will be provided by or can be expected from IXI given the public networks involved.

New action list:

Date added -----	Description etc -----	By -----	Status -----
1990-06-22	develop interfaces between EARN-IXI and IXI-PT.	HRD	Ongoing
1990-06-22	Provide description of all GBOX nodes and their communications environment	NOR	Ongoing
1990-06-22	Develop schedule for E-, G- box interoperability testing.	NOR/DB	
1990-08-20	Status of minutes of EARN-IXI DOC90-8 -- should be NOG paper ?	PEB/HRD	
1990-??-??	Upgrade IEGBOX to VMS 5.3-1 from 5.3	TW	
1990-09-12	Conference call concerning doc 90-10 modifications		
1990-09-12	Obtain IXI throughput test results	MP	
1990-09-12	Standardize IXI tests and results (testing plan)	NOR/DB	
1990-09-12	Initiate interoperability testing	NOR/PS	
1990-09-12	Compile document with set of tests and criteria (EARN-IXI DOC90-13)	NOR	

[End of Action List]