

# **Confidential Release**

**Case Number: 94-1695-TP-ACE**

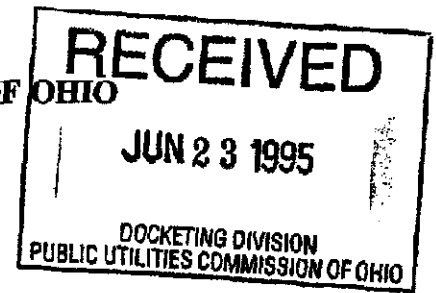
**Date of Confidential Document:  
June 23, 1995**

**Today's Date:  
August 20, 2009**

**Cincinnati Bell Telephone Co.'s Exhibit 'L' filed  
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Technician SM Date Processed AUG 20 2009

BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO



In the Matter of the Application of )  
Time Warner Communications of Ohio, L.P. )  
and Time Warner AxS for a Certificate )  
of Public Convenience and Necessity )  
to Provide Direct and Resold Exchange )  
Services, Including Local Exchange and )  
Dialtone Services )

Case No. 94-1695-TP-ACE

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## MEMORANDUM

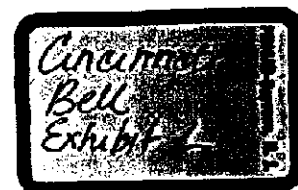
Date: April 17, 1995

To: HFC Telephony Core Team  
HFC Telephony Support Team

From: Neil Abramson *NA*

CC: Distribution  
Tom Piette - Tellabs Operations  
Ed DiRenna - Tellabs Operations  
Becky Burton - US West BRI

Subject: Tellabs SFR Development Status Meeting of 4/13/95



A Development Status meeting with Tellabs Operations Inc. was held on 4/13/95 at Time Warner Communications' offices, 160 Inverness Drive West, Englewood, CO. This meeting was held to establish the current status of the Tellabs RSU Single Family Residence (SFR) trial in Rochester, NY and lab in Denver.

The most critical result of the meeting is that Tellabs announced its second delay in the development schedule since project start. Current estimated ship date is 7/27/95 (revised from 5/12), indicating an in service date of 8/31/95 for the Rochester trial. The lab equipment would be in service earlier at 8/16/95.

### Topics of Discussion:

- *Point to Point (RST) Status* - Revision C boards are in final stages of development and are scheduled to ready for deployment 6/1/95. These are the boards that would be considered commercial availability and used for our limited deployment in Rochester later this year (see Attachment 1).
- *Point to Multipoint (RSU) Status* - The current percentages of the hardware and software designs for the point to multipoint design for SFR (RSU) were reviewed (see Attachment 2 for status as of 4/13). These percentages of work complete led directly to a review of the estimated work remaining and the milestone dates resulting in a 7/27/95 equipment ship date (see Attachment 3). Basic dial tone only could be demonstrated on 6/25/95 per Tellabs. Chris Barnhouse will be contacting Tellabs on 4/17 to discuss the status of the trial based on these major changes.

The primary item responsible for the delay in shipment is the design and availability of the TDMA burst receiver. Two approaches are being pursued by Tellabs: the first subcontracted to Stanford Corporation which is complete and being tested now; the other a Tellabs in house design scheduled to be ready 5/10/95.

- *Fractional RF Status* - This refers to the existing point to point (RST) product with TDMA capability to better utilize bandwidth for MDU applications. Current schedule shows prototypes to be available for this application 9/15/95 (see Attachment 4 for details).
- *RSU Power* - Tellabs presented information showing basic power consumption for a 1 line unit at sub-watt idle (.964 w). During on-hook transmit (handshake to HDT) it would be 1.175 watts. Off hook would draw 1.763 watts and one phone ringing (1 REN) would draw 2.075 watts (see Attachment 5 for details). These are average values. Duty cycle is needed for full understanding of power requirements, in addition to the in rush surge at start up. Design window for the RSU should be 40 - 90V with a low voltage cutoff threshold of about 35V and come back at 38V. Paul Brooks currently in discussions on these topics and power passing tap characteristics with Pat Cameron.
- *RF Concentration* - The ability to provide concentration in the RF is in the base product that is in service now, and will be in the point to multipoint product as well. The system will keep track of call attempts and calls blocked. It provides the ability to adjust the amount of concentration based on the rate of blockage by monitoring call attempts and blocks. While this feature will be important for deployment, much research is needed to fully understand how much concentration is appropriate and what the effects of multiplicative concentration in the RF, between the HDT and switch, and internal to the switch will have on the overall rate of blocking. The trial system will be installed with no RF concentration initially for these reasons. It was agreed that experiments would be planned over the 90 days of the trial to explore the effects of RF concentration.
- *Training* - Due to the revised schedule, it was agreed that the current training scheduled for Lisle, IL on 5/24 and 5/25 would not have equipment available for hands-on use. At this time, it appears the time frame of 7/20 and 7/21 would be more appropriate based on Tellabs presentation. These dates are NOT firm and are highly dependent on the status of development as the project proceeds. The date will be firmed up as we get closer to having demonstrable product.
- *CPU Upgrade* - Although no definite conclusions have been reached, there is a high probability that the CPU in the HDT will need to be upgraded with more memory. This upgrade will provide the ability to operate both the point to point and point to multipoint system on a single HDT platform. The ability to operate from an single platform for both technologies is a key requirement for large scale deployment since it provides efficiencies in cost, maintenance, training, and spares. The upgrade would be accomplished on a non-service affecting basis.

**Action Items :**

1. Set up every other week conference call between Tellabs and Time Warner to closely monitor the status of development. We will move to every week calls as demonstrable product gets close. Tom Piette to set up conference bridge number by 4/19. The first call is scheduled for 4/21 at 2 PM MDT for about 1/2 hour.
2. Although local powering of the RSU is an option for niche markets, it is not consistent with Time Warner Communications' large scale telephony deployment strategy. Therefore, Tellabs is not to divert resources or increase priority of this powering method for Time Warner. Tellabs is to continue development of the specified network powered system to be able to meet its proposed schedule without distraction. Wayne Partington
3. One of the RSU units will be powered from the network via Siamese coax twisted pair from a power passing tap. Tom Piette coordinate with Paul Brooks to identify appropriate home and tap.
4. Send Tellabs a list of tests that Time Warner requires for demonstration prior to shipment. Neil Abramson

Refer any questions regarding these meeting minutes to me at 303-799-3310. Fax number is 303-649-9749.

## ATTENDEES

### Time Warner

Dan Engleman	303-799-3302
Jim Haag	303-799-3320
Paul Brooks	303-799-5726
Paul Gemme	303-799-5505
Bill Behringer (call-in)	716-756-1193
Ron Lang (call-in)	716-325-1111 x 449
Tom Foster (call-in)	716-325-6806
Neil Abramson	303-799-3310

### Tellabs Operations

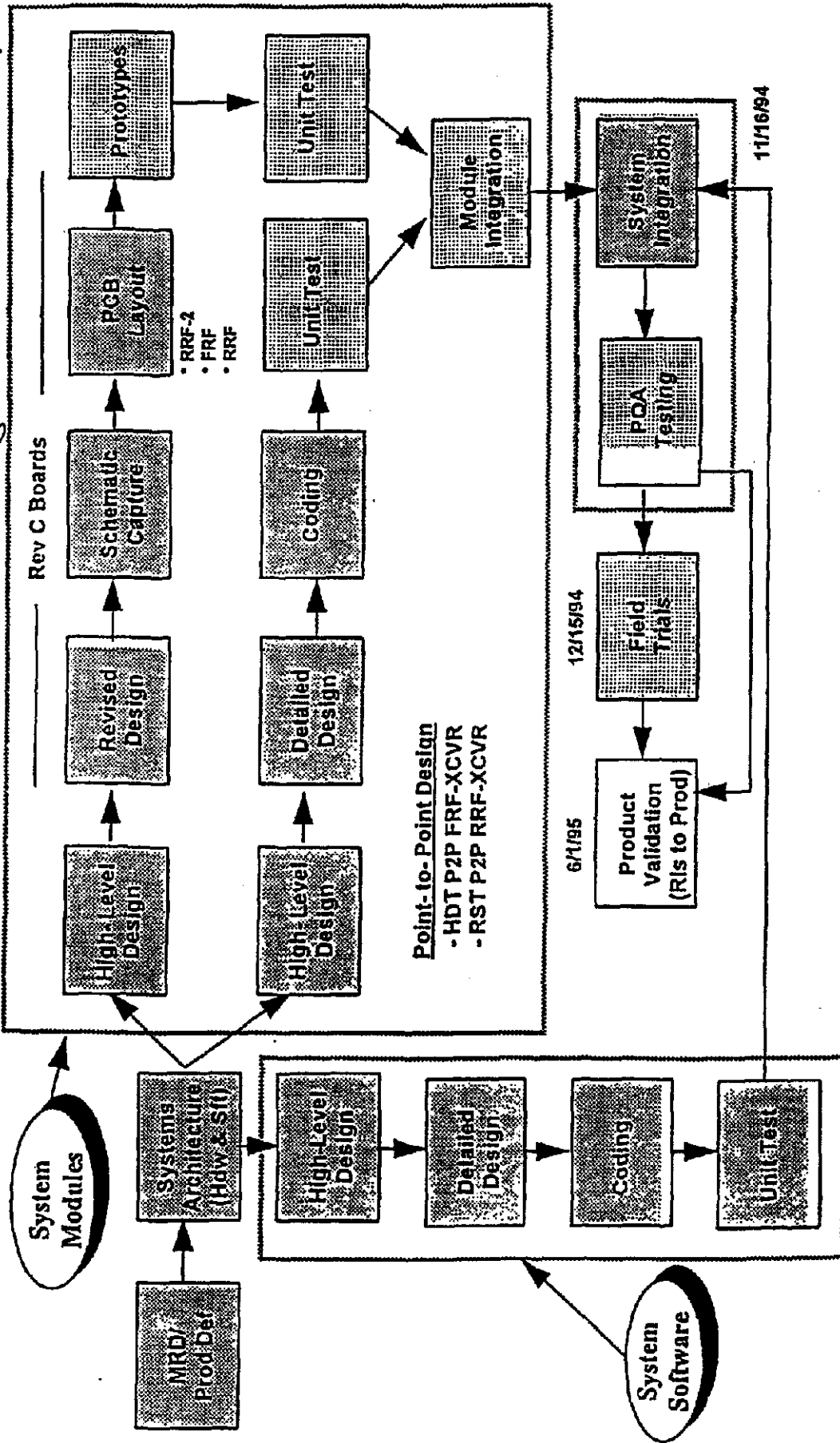
Tom Piette	708-378-6676
Ed DiRenna	303-825-7001
Dennis Meidal	303-825-7001
Wayne Partington	708-378-6674
J. Thomas Gruenwald	708-378-6237
D.G. Lemley	708-378-6012

## ATTACHMENTS

(Point to Point MDU)

# Overview of P2P Development

[ Shading indicates percentage complete 1/13/95 ]

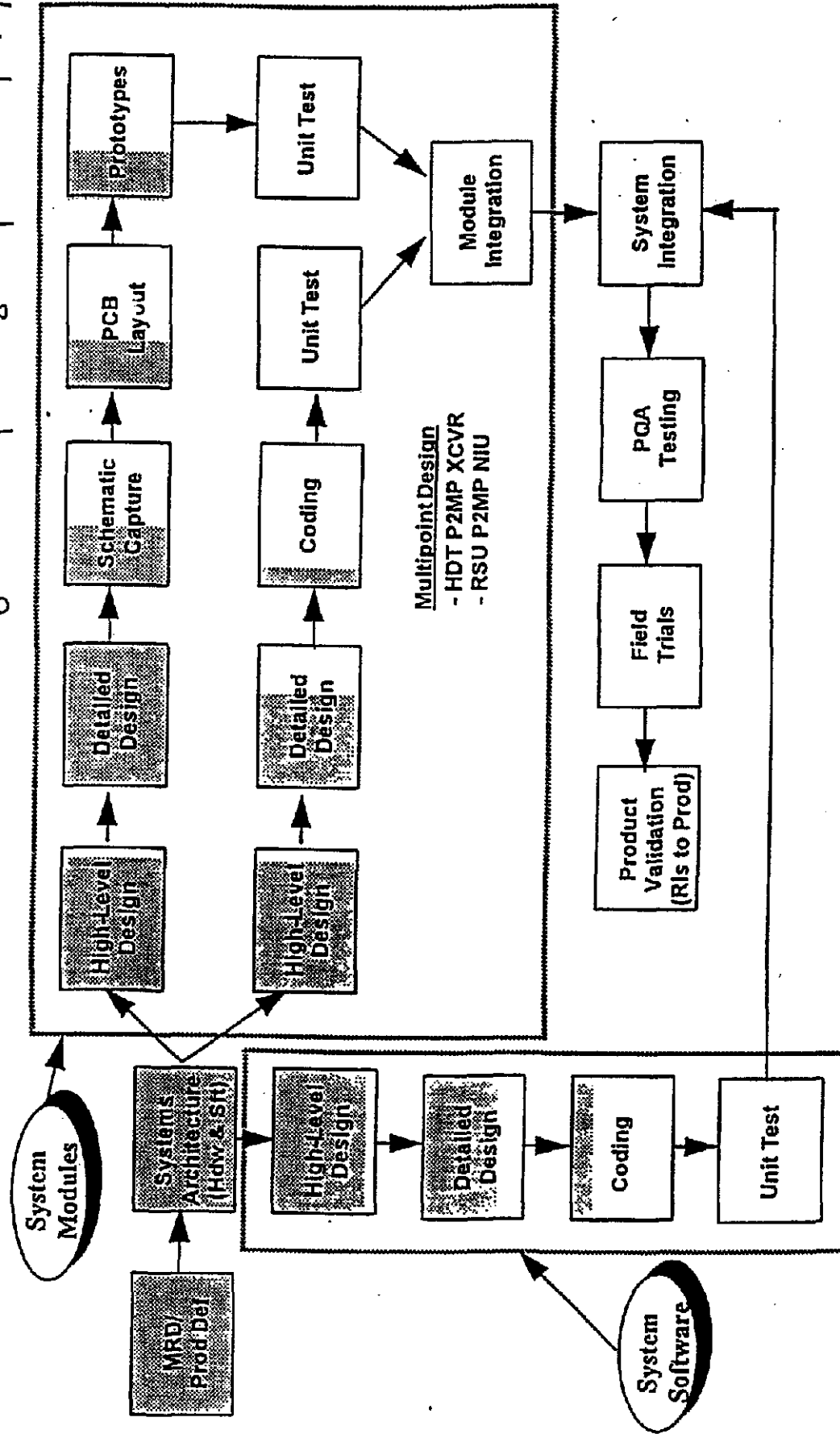


# Attachment 2

(Point to Multipoint SFR)

## Overview of P2MP Development

[Shading indicates percentage complete as of 4/13/95]



# Point-to-MultiPoint Milestones

<u>Key Milestone</u>	<u>Definition</u>	<u>Date</u>
Burst RCVR Avail	Stanford Receiver Acceptance Test	4/10/95
Burst Modem Demo	Burst Modem passes data	5/15/95
RSU Card Available for Test	Proto RSU card including radio and modem assembled	6/2/95
HDT Card Available for Test	Proto HDT card including radio and modem assembled	6/6/95
RSU FW Coded	RSU FW coded and unit tested	6/28/95
P2MP HDT FW Coded	Mods to E1 FW coded & unit tested for HDT P2MP card	7/12/95
System SW Coded	UMC System SW coded and unit tested	6/21/95
P2MP System Demo	P2MP cards pass data (data>RF>data) under UMC system control	6/25/95
Field Trial Systems Tests Complete	System passes tests of essential set of capabilities (TBS) necessary for field trials	7/27/95



Attachment

# Fractional RF Development

## ● Point-to-Point System with TDMA Capability

- Headend Hardware identical to MRF  
Firmware and Software differ
- Remote end similar to RRF with Burst  
Transmitter capability; Firmware & Software new

## ● Schedule

- |                                 |         |
|---------------------------------|---------|
| - Requirements Available:       | 5/5/95  |
| - Hardware Prototypes complete: | 7/25/95 |
| - Software Complete:            | 8/26/95 |
| - Prototypes Available:         | 9/15/95 |



tollabs

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# RSU MRF Power Budget

Power Calculations are Estimates

1 Line Unit (2 Line Does not double figures)

RSU State	SLIC (incl BORSCHT)	Codec	Control & Framing	Radio & Modem	Power Supply	Total Power (Watts)
Idle	50 mw	1 mw	320 mw	400 mw	193 mw	.964
On-Hook, Xmtg	180 mw	40 mw	320 mw	400 mw	235 mw	1.175
Off-Hook, Act	650 mw	40 mw	320 mw	400 mw	353 mw	1.763
Ringng (1 REN)	900 mw	40 mw	320 mw	400 mw	415 mw	2.075

	CPU/Baseband	BURST Modem/RF	Total Power
MRF XCVR	3.25 Watts	5.0 Watts Stanford 2-3 In-House Version	8.25 Watts

Power  
Budget

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