1 users.

2 So the net result is when you architect a network
3 you build it based on those statistically burstiness levels
4 and how you -- that's where the 2,000 users come from, the
5 672.

6 The difference with CBR services, depending upon
7 where you pull it off of the network, is they do not smooth
8 their additive. So it's the same 96 kilobits at every level
9 of the network. So from the point that you provision at the
10 end user to the point you provision out of the network to
11 connect to wherever -- for example, for voice services --
12 you take the full 96 kilobits.

13 So if you stop and think about it for a second --
14 and it's continuous. So if you take the band width utilized
15 at 96 kilobits for 24 hours a day versus the band width used
16 by an average user web browsing for an hour a day, you
17 actually have much more band width per user for the CBR
18 service. That's the big challenge there across the
19 networks. It's the technical challenges are not there.

20 It's a mathematical challenge versus a chip-level
21 challenge. We can implement the chips to build things but
22 it's where you pull it off.

23 So the farther up in the network you pull off the
24 CBR service, the bigger the impact is. If you pull it off
25 at the DSLAM, it has a different impact because you pulled

1 it off where you're just using the band width in the high
2 speed dedicated pipes. As the pipes get skinnier, the
3 impact of CBR services goes up dramatically.
4 So I think that's the critical issue as you look
5 at engineering these networks. If you pull it off at the
6 top of the network, for example, if you have to run it
7 across the country, that CBR band width is there 24 hours a
8 day across the country for somebody who may use the
9 telephone for 20 or 30 minutes a day.
10 MR. STANSHINE: I read you saying that it's a cost
11 issue then.
12 MR. EDHOLM: Right. It's not a technology issue
13 in that case, it's an -- the architecture can be built but
14 then it's a cost issue.
15 MR. STANSHINE: And if somebody buys a 45 megabit
16 CBR channel to make one phone call for four minutes a day he
17 can still be charged for a 45 megabit CBR channel, I assume.
18 Does that sound reasonable?
19 MR. EDHOLM: Exactly.
20 MR. STANSHINE: Okay.
21 MR. EDHOLM: Exactly. So it's just depending on
22 what you're willing to pay for the band width.
23 MR. GUPTA: Yes. I'm coming back to the loop --
24 question number two. The decision was, we are only making
25 UBR and CBR because of ADSL and the voice -- is there a

1 reason why you go UBR? Because of the ADSL or the SDSL if
2 you cannot put it right now, the manufacturer? Is there any
3 reason behind why you've decided only ADSL?
4 MR. SACKMAN: Well, let me answer two questions.
5 I want to answer yours second and I want to answer his
6 first. First of all, both lights --
7 MS. FARROBA: Wait. Go ahead and identify
8 yourself for the record.
9 MR. SACKMAN: Oh, Jim Sackman from AFC. Both
10 light span and the UMC 1000 from AFC have what's called the
11 central office terminal where we actually hand over both
12 voice and data into other pieces in the central office even
13 though we might have a terminal at the remote that's 120
14 lines of 224 lines or 672 lines, we aggregate those and by
15 the time they get back to the COT, both systems can support
16 2,000 customers even though each RT may be individually
17 smaller. That's one fact.
18 The other piece is DSL and the ATM capabilities
19 are completely independent and, in fact, I suspect you'll
20 see SHDSL offerings from us this year and I don't know about
21 light span, but I assume as well. So the ATM capabilities
22 are completely independent of the DSL capabilities.
23 MR. GUPTA: No. That I understand. Only question
24 was that initially we -- the UBR -- the UBR only because of
25 the ADSL thinking?

1 MR. SACKMAN: Because it's easy.

2 (Laughter.)

3 MR. GUPTA: Is there any other reason? No CBR was

4 given initially because of the HDSL?

5 MR. SACKMAN: Well, it's pretty clear that the

6 driver for DSL was mainly web browsing. The nature of that

7 beast is it's highly statistical in nature and it's far

8 cheaper to provide UBR service than anything else.

9 MR. GUPTA: Is there any reason -- do you think

10 that it will be the whole -- the DSL services will be

11 developed later on?

12 MR. SACKMAN: Oh, I believe there will, indeed, be

13 other classes of service. We do offer CBR today for

14 business customers, a very small number of these things.

15 You're talking about an order of magnitude

16 difference in cost and probably an order of magnitude

17 difference in price.

18 MS. FARROBA: Just a second.

19 Do you still have a comment?

20 MR. GERTZBERG: Yes.

21 MS. FARROBA: Yes.

22 MR. GERTZBERG: Just getting back to the initial

23 question like John from Copper Mountain alluded to.

24 Your basic question was whether it's technically

25 feasible or not? I mean, yeah, our company, AT&T, sells

1 various flavors of ATM to a variety of customers today.
2 Yes, there's a lot of vendor arguments as to boxes that were
3 built at previous points in time as to whether they have
4 those capabilities or not.
5 But I think moving forward, you'd be -- and I know
6 in our company we'd be hard pressed to find a company that
7 only had CBR and UBR. I mean I think every box that I have
8 in my lab has the full compliment of ADSL -- of ATM
9 capabilities.
10 I guess the other point also, I'm thinking that
11 the outside point is only going to be used for web browsing.
12 It's kind of limiting the whole industry in the future. I
13 mean voice over DSL is one of the -- has been one of the big
14 things propelling the whole DSL industry forward to do voice
15 over DSL and confining that to just a pure CBR environment
16 for the voice is extremely limiting and inefficient.
17 I guess that's pretty much exactly what John had
18 said before and our company would agree 100 percent with
19 what he said.
20 MS. FARROBA: Just a second. I guess Rhythms?
21 MR. REILLY: Just one more comment on the -- David
22 Reilly with Rhythms. Just one more comment on the band
23 width issues.
24 You know, in most of the discussions I talked
25 about, there isn't enough band width, assume that there's

1 2,000 customers using CBR and that's just not a reality.
2 Most of the customers are going to be mass market
3 customers using UBR, but not allowing that small percentage
4 of customers that want a differentiated service for voice
5 over DSL or any other service a competitor may offer.
6 That is a ludicrous statement trying to limit band
7 width based on everybody having CBR when, in reality, it's a
8 mixture of everything. If you do that -- if you do the
9 mixture it becomes an ATM network just like AT&T and
10 WorldCom provide today. There are different customers
11 willing to pay for different classes of service.
12 MR. McNAMARA: We never did deny that.
13 Just one more thing. I think Dr. Ransom will
14 recognize that Bell South and my colleagues down on the
15 right of me have been beating him over the head for years
16 about different classes of service for ATM and we will get
17 this eventually but it's not because of lack of trying.
18 (Laughter.)
19 MS. FARROBA: Okay. Just really quickly and then
20 we're going to move to question number eight and then take a
21 short break. Go ahead.
22 MR. JEFFRIES: Two brief comments. Two brief
23 comments. One on question seven and one is on question two.
24 On question seven, I agree with the discussion
25 that DWDM is perhaps too expensive and is not practical.

1 However, course wave division multi-plexing where you just
2 put a very small number of lambits on the fiber is, in fact,
3 very cost-effective if you're talking about adding a single
4 lambits in the order of under $1,000 per end.
5 The second point on number two, ATM is a well
6 understood, widely deployed multi-plexing technology, a
7 great choice for today's network. Going forward it may not
8 support -- as we move from three million DSL subscribers to
9 say 100 million it may not be the multi-plexing technology
10 of choice.
11 I agree with the gentleman from Copper Mountain
12 that by a combination of other multi-plexing such as IP and
13 gigabit ethernet over course wave division multi-plexing we
14 could have a lot more capacity.
15 MS. ROSENWORCEL: Okay. Some of you have touched
16 on it already, but I'd just like to move to the WDM question
17 before we go ahead and take a break.
18 For the record, I'm just going to read it. How is
19 the capability of the shared transmission facility affected
20 by incumbent LEC installation of WDM technology, whether it
21 be coarse or dense? Is the fiber being deployed by ILECs in
22 the local loop that's capable of supporting WDM and is it
23 cost-effective for loop length distances?
24 MS. FARROBA: And then just once more, please
25 remember to identify yourselves for the record. Thanks.

1 MR. RANSOM: Thank you. This is Neil Ransom from
2 Alcatel. I hope we keep in the context the problem we're
3 trying to solve now is where somebody, a CLEC, wants to
4 deploy a small DSLAM and they're at a remote site and how
5 did they get band width back up or is this a resale
6 environment and they're wondering what classes of services
7 are available on the individual DSL ports that they can
8 resell and offer variations?
9 It seems some of the questions we're answering one
10 and some were answering the others.
11 I assume in the case of the DWDM or WDM case we're
12 talking about how do we supply band width to somebody's
13 mini-DSLAM that might be collocated at an RT site or near an
14 RT site? Obviously, you can drop band width from the
15 existing DLC. I will say most of them will drop a DS-1, is
16 the typical capability, and so some DSLAMs use DS-1s or
17 multiple of those in an IMA capability upstream.
18 Products like the 2012 can also drop a DS-3 or
19 OC3. Now that is just at physical circuit. So that's CBR,
20 but it's even more than that. It's just a bit stream, you
21 can do IP or anything over that.
22 In some cases DLCs are deployed with a separate
23 SONET multi-plexor that can typically then drop DS-1, DS-3,
24 OC3 or whatever from that SONET terminal.
25 But now at some point then you say, "Well, how

1 many DS-3s and how many OC3s can you drop?" Obviously,
2 that's a limited number and what happens when you run out of
3 that capacity?
4 Well, the other option might be, and in some cases
5 there may be additional fibers brought out to the remote
6 terminal in addition to what's serving the digital loop
7 carrier system that were being used or put in for future
8 uses for business customers or so forth, potentially some of
9 those fibers might be available.
10 Then the question comes up, " well, can you use
11 the existing fibers that serve the DLC, use additional wave
12 lengths on that?" I suppose though that you can break off
13 those wave lengths to feed a mini-DSLAM that can terminate
14 an optical interface.
15 In the case of light span, we do have a way to
16 combine the narrow band traffic and the broad band, which
17 are normally on separate fibers, onto the same fiber using
18 what's often called coarse WDM, that is using close to 1300
19 and 1500 wave lengths in order to serve that.
20 Of course, Alcatel and many manufacturers serve --
21 produce DWDM so you can take the 1550 and break it into many
22 different wave lengths and that's done on long haul, which
23 is much less cost-sensitive because of the long fibers that
24 you're saving. In a short distance like that it would be
25 prohibitively expensive to use DWDM over such a short

1 distance.

2 It would be far more economic just to supply more

3 fibers, although obviously if you're in a case where you've

4 already deployed the fibers and whatever you have is

5 whatever you have, digging up to install new fibers if it's,

6 indeed, buried might be difficult. But DWMDM would be

7 extremely costly for this.

8 So the bottom line, just make sure we're

9 understanding the context because I think all of these ATM

10 classes of service had to do more with what are available

11 from the DSL drops that may be resold, I suppose.

12 If the question is how do you get band width to

13 someone's remote terminal then it's probably dropping DS-1s

14 or if it's available, DS-3s or OC3s. They're limited in

15 number. You can gain some additional fibers using coarse

16 WDM. It's still more costly than separate fibers.

17 I will say that though Alcatel has available the

18 ability to combine these wave lengths with coarse WDM. This

19 has not been a popular service. Most of our network

20 operators have found it more economic just to use additional

21 fibers.

22 MS. ROSENWORCEL: Okay. Nortel?

23 MR. EDHOLM: So -- Phil Edholm from Nortel. In

24 agreement that generally today in the ATM network

25 environment CWDM is probably a viable alternative for

1 certain locations. It's basically a trade-off, the cost of
2 fiber versus cost of equipment.
3 I think what's more interesting here is the longer
4 term implications of this, which is, as these overlay DSLAMs
5 and let's say the next-generation of equipment in that space
6 which is 10 and 100 megabit, whether it's fiber or copper-
7 based ethernet services comes in, the cost of gigabit
8 ethernet is dropping dramatically. The cost of doing that
9 in DWDM is dropping dramatically.
10 So the capability to see light land to level
11 services coming back from the DLC to the CO for a service
12 provider to provide that level of services, where you may
13 now be aggregating 100 megabits or even gigabits at some
14 point, is where I think this is really going to turn out to
15 be of great value. Those services, by the way, I don't
16 think are that far away.
17 MS. ROSENWORCEL: Okay. AFC and then I think
18 we're going to try and take a break.
19 MR. SACKMAN: Yes. A couple of comments. This is
20 Jim Sackman from AFC. It is not actually possible to deploy
21 a DWDM system today in remote cabinet because you require
22 cool lasers and they are not environmentally hard and nobody
23 makes environmentally hardened DWDM equipment. So it's
24 going to be a while until we get there because you require
25 laser cooling and the environmental specs on a cabinet are

1 minus 40 to plus 65 degrees C. You might get there with
2 CWDM but not DWDM any time soon.
3 The other piece of this is, AFC delivers voice and
4 data over combined fiber no matter what you want to do. So
5 we don't have separate fiber transport for voice and data
6 and that's absolutely possible. We also are providing OC3
7 ATM drops out of our product, not just bit pipe drops. So
8 you'll be able to provide synchronous -- very synchronous
9 multi-plexing into DSLAMs that you want to subtender off of
10 that.
11 MS. ROSENWORCEL: Okay.
12 MS. FARROBA: Okay.
13 MR. KIEDERER: Maybe just one final comment as an
14 outside plan engineer. You know, we've heard a lot from the
15 vendors about what could be done and what they're developing
16 and that's all grand and wonderful. But I guess as an
17 outside plan engineer I think what we've heard and what we
18 need to deal with -- we've got to look at what we've got,
19 too, not only where we're going. I mean that's all well and
20 good, but we've got a huge network investment that's already
21 out there.
22 What we've heard is that there are many options on
23 the table, there are many options in the existing network,
24 okay. But an outside plan engineer is going to take a look
25 at a site by site analysis in the outside plant to say,

1 "Okay. What do I have here? What are the conditions here?
2 Can I do WDM? Do I have spare fibers? Can I put an
3 additional electronics for transport? Do I have the space
4 and the air conditioning and all of the things that an
5 outside plan engineer does today?"
6 So I want to go back to a point I made earlier,
7 and that is we can't over-generalize with what we're
8 hearing, that there's going to be a single solution to any
9 of these issues because in reality there just aren't.
10 MS. ROSENWORCEL: All right.
11 I think we're going to start back up at 2:45.
12 (Off the record at 2:35 p.m.)
13 (On the record at 2:45 p.m.)
14 MS. FARROBA: Okay. We're going to get started
15 again. If everyone would please take a seat. Also, just
16 one more reminder, when you speak please identify yourself
17 for the record. I think we're going to move on now to --
18 MR. LUBE: Ms. Farroba? Excuse me.
19 MS. FARROBA: Yes?
20 MR. LUBE: This is John Lube with SBC. One sort
21 of introductory thing. What we've left are a couple of
22 subjects, a couple of your questions, that related to things
23 that would have to be added to the network to increase
24 capacity perhaps, that kind of thing. There are some more
25 of these that are coming up in some additional questions.

1 With respect to all those, I just -- I'm compelled to make
2 one comment from an ILEC point of view because it applies to
3 the future questions and the old questions.
4 No matter what technology or new equipment types
5 that a vendor has on the shelf or even on the radar screen,
6 that in itself does not make it economically appropriate for
7 an ILEC to put that into its network.
8 There was a question that was asked by the
9 gentleman at the far end of the table over there about
10 pricing. I am not a price person, as I said a minute ago,
11 but I wanted to clarify for you all's record that from a
12 network building perspective my problem is, if I build this
13 additional capacity that we've been talking with you about
14 so far in the forum, I have absolutely -- and even if I
15 charged some more for certain pieces of it like a larger CBR
16 that I was asked about, I have no guarantee that I will get
17 reimbursed or compensated for that additional piece of
18 network that I have bought. Because it's like the "Field of
19 Dreams" syndrome. I might build it --
20 MS. FARROBA: Okay.
21 MR. LUBE: -- and it might not come.
22 MS. FARROBA: I think I get the point, but we need
23 to move on because we only have until 4:00.
24 MR. LUBE: Okay. I'm sorry.
25 MS. FARROBA: So --

1 MR. LUBE: I just -- I just wanted to clarify
2 that --
3 MS. FARROBA: Right.
4 MR. LUBE: -- previous question --
5 MS. FARROBA: I think it's --
6 MR. LUBE: -- that you had asked.
7 MS. FARROBA: -- I think it's clear for the record
8 now.
9 So we'd like to move on to question number five,
10 which is, what are the reasons for separating voice and data
11 channels into different lines or wave lengths? Is it
12 technically feasible to combine voice and data signals on
13 the same line or wave length?
14 MR. SACKMAN: This is Jim Sackman from AFC. The
15 answer to that is yes. In fact, that's the way our product
16 ships today and will continue to ship in the future.
17 MR. RANSOM: And for Alcatel, the reason why we
18 had separate fibers for the data part and the voice part was
19 that the data was added as an overlay on existing systems
20 that were already out in the field. In the case of the
21 light span 2012, which was a later product, the voice and
22 data are carried over the same wave length.
23 MR. McNAMARA: This is Bill McNamara at Bell
24 South. Yes. You do it only because it's the most cost-
25 effective way to provide that capability. The data can be

1 aggregated on a time division multi-plex basis by ATM, using
2 something that can be done with the gigi. It can be done
3 with a whole bunch of different technologies on a single
4 wave length. It could even be done with frequency division
5 multi-plexing on a single wave length.
6 MR. LUBE: This is John Lube with SBC. Just to
7 help us explain or to answer any questions that you may have
8 about this, is it possible for you all to give us a feel for
9 the context that you were asking this particular question
10 in? I've been asked this before in state proceedings and I
11 wanted to make sure that we were being responsive to you in
12 what you're trying to find out about that.
13 MR. GUPTA: Yes. The whole question is, what I
14 understand that you, TDM and your ATM did because of the
15 existing switches existing right now, correct? Voice
16 switches are TDM-based? That's the reason you used TDM in
17 the voice?
18 MR. RANSOM: Yes. TDM is used in the voice
19 because the network that was put in place was a TDM network.
20 MR. GUPTA: Okay. In the future do you think that
21 we will go to the voice over IP?
22 MR. RANSOM: Well, I can't -- this is Neil Ransom
23 from Alcatel. I believe that relates to a different
24 question here, but do we believe that voice over IP will be
25 popular in the future? We believe that it is. In fact,

1 voice over IP carried over DSL might be very popular, as
2 well, in the future as one of the alternatives.
3 MR. GUPTA: So right now there is no plan to put
4 voice over on DSL? I'm asking because --
5 MR. RANSOM: Okay. Well, just to make clear.
6 Maybe to -- then a background just so we have a context for
7 this. Today in DSL the voice is carried as always as an
8 analog signal. The data is carried in upper spectrum.
9 Within that data stream, of course, there is a lot of data
10 and could be used to carry additional voice channels within
11 the data.
12 In fact, that hasn't been lost in the
13 manufacturing community and a number of manufacturers now
14 build equipment to add additional voice services over the
15 DSL data stream. That's carried as DSL data. Then
16 someplace in the network in some sort of gateway, those
17 packets that are carried the voice signals are recovered and
18 turned back into a voice signal typically to terminate then
19 on the Class 5 switch either of the incumbent operator or
20 this could be carried by a competitive carrier who is
21 offering voice services over either the ILEC or CLEC
22 provided DSL service.
23 So voice over DSL is a very popular subject of
24 today. There's conferences on the like. There's even books
25 out on the like. I will say that not too much have been

1 deployed yet for various reasons, but it may become a
2 popular service.
3 MS. ROSENWORCEL: If I could just jump back to the
4 point that SPC was making. You asked him what context are
5 we asking this about voice and data channels separating out.
6 Because in the pronto architecture as it's been presented to
7 us and other ILECs have described how they need to separate
8 out their TDM traffic from their ATM traffic.
9 What I heard earlier was this is a cost-effective
10 solution because you've got the existing TDM voice services
11 and that's why you're separating things out. But our
12 curiosity is, is there a technical feasibility in combining
13 the TDM and ATM traffic?
14 MR. LUBE: No. From the SPC/ILEC perspective, it
15 does help to understand where you are coming from on that.
16 Some of the context that this has come up in, in state
17 proceedings, has been over philosophical debates, if you
18 will, on whether having voice and data ride the same fibers
19 is the same thing as what the FCC defined as line sharing.
20 That's why I wanted to see if you were going there.
21 But basically as far as what we've said about
22 project pronto as the buyer of the equipment, is that we
23 have looked at a lot of different products, a lot of
24 different platforms, to deploy. The one that was most
25 economically appropriate for us to deploy happened to be

1 separate fiber paths for the voice and data and that's
2 really the circumstances under which that occurred.
3 MS. ROSENWORCEL: Okay. So you're saying it's
4 economic?
5 MR. LUBE: It was compared to the other choices
6 that were considered.
7 MS. ROSENWORCEL: But it's not a question of
8 technical feasibility?
9 MR. LUBE: No. In fact, we've never claimed that
10 it was infeasible to do so. That's really more a vendor
11 question to answer, anyhow. In fact, the AFC product does
12 do that. The voice does come back out of the AFC product as
13 an analog voice signal, though.
14 Regarding voice over DSL, the comment or the
15 question that was asked --
16 MS. ROSENWORCEL: Well, actually that was part of
17 another issue and I'd like to try to finish this issue.
18 MR. LUBE: Okay.
19 MS. ROSENWORCEL: I know we started down that
20 path, but I'd like to finish this question up first. I
21 guess, Nortel, if you could -- go ahead and --
22 MR. EDHOLM: Phil Edholm from Nortel. I think
23 it's important to realize that when you talk about mixing
24 this traffic coming out of the back of the DSLAM the analog
25 traffic goes into the TDM network and, therefore, the

1 decision to carry those over single fibers is actually the
2 same as the WDM decision. It's a question of fiber versus
3 the complexity of mixing those signals together.
4 On the other side, I think the question that was
5 asked farther back into the network which is mixing voice
6 and data all the way to the subscriber end node. That's
7 where I think IP telephony or voice over IPR, if you want to
8 define it, becomes very interesting because if you look at
9 most of the services that are offered over DSL today, though
10 the carriage from the subscriber to the exit point is, in
11 fact, ATM, 99 percent of the traffic is IP.
12 In fact, the IP service provider who may be doing
13 telephony services may, in fact, be just using the DSL and
14 ATM network as a path to the subscriber. That actually
15 brings up some very interesting issues in QOS that we didn't
16 talk about, which is how you provide QOS functionality
17 that's not in the CBR space for voice traffic that, in fact,
18 you want to run in the VBR/UBR space.
19 Because the advantage of IP telephony is you don't
20 use band width up when you're not talking. You only use
21 band width when you're talking. So there are a whole other
22 set of issues depending upon where the voice is injected and
23 removed from the network.
24 MS. ROSENWORCEL: Copper Mountain?
25 MR. REISTER: Yes. Specifically addressing the --

1 it's John Reister, by the way, from Copper Mountain.
2 Specifically addressing the POTS voice, the analog voice,
3 that's carried on the line as opposed to the derived voice
4 that comes from the premise, I would point out that the fact
5 that it goes TDM is very much of a today technology and a
6 legacy network technology.
7 But as we look forward -- and we have customers
8 deploying packet-based voice technologies today. In fact,
9 they're in the room although not at this table. You could
10 certainly take the POTS service that comes in -- and today
11 that gets converted to TDM and the question about carrying
12 it over ATM, you know, that's just converted from TDM to
13 that constant bit rate and it can be carried over the ATM
14 pipe and that's what all the DLCs here are doing.
15 But you could absolutely take that and instead of
16 carrying it TDM, which requires that you bring it into a
17 Class 5 switch, the host switch that's in the serving wire
18 center, instead you could certainly terminate that POTS
19 service right there at the RT and you could convert it to
20 voice over IP or voice over ATM right in that module at the
21 RT location.
22 The benefit of that, this technology is commonly
23 called soft switch technology. There's a host of competing
24 protocols on it and among them SIP, MGCP and Megaco, but
25 when you take that the nice thing about it is that what

1 controls the features on that particular customer is either
2 a SIP server or an MGCP call controller. I'm getting to why
3 this is really exciting.
4 (Laughter.)
5 The nice thing is that carriers can have their own
6 call controller. There's no Class 5 switch in this picture.
7 So as a result, a competitive carrier can come in and have
8 their own soft switch controlling that particular port on
9 that RT and can offer a completely unique set of services
10 relative to the services that a different competitive
11 carrier or the incumbent carrier is providing.
12 So that technology is certainly very much the
13 future and I'm seeing trials in the next 18 months and 36
14 month timeframe for substantial rollout.
15 MR. GERTZBERG: If it's possible, I guess I agree
16 with everything that John from Copper Mountain said. I
17 think he's sort of going into question number three already.
18 So if you're ready to address question number three, I'm
19 ready to address question number three. It is related.
20 If you want me to hold off, I can hold off.
21 MR. KING: Okay.
22 I guess let's go ahead and --
23 MR. STANSHINE: Could we hold off a little bit.
24 MS. FARROBA: Sure. Ask your question.
25 MR. STANSHINE: I guess Catena had something to

1 say on -- are you getting into question number three, as
2 well, or are you --
3 MR. BOLTON: Well, no, I just wanted -- this is
4 Gary Bolton from Catena Networks. I just wanted to make
5 sure that the Commission understands the importance of being
6 able to offer both options and their policy to have both --
7 to have a separate path for voice and data as well as to
8 have a common facility to carry both voice and data.
9 I think as Charlie's pointed out on several
10 occasions, that every RT site is different. I think in the
11 May session we had here with you all, it was pointed out
12 that there was like 95,000 RT sites. So you want to be able
13 to make the best decision on an RT by RT basis.
14 As has been pointed out, the network is starting
15 to move to a converged packet-based network. So to be able
16 to packetize [sic] your voice data at the point of
17 termination in the RT and to be able to deliver that over
18 MGCP or Megaco into a soft switch network is critically
19 important so that both voice and data are over a single
20 facility.
21 As well, today you might want to not go to the
22 soft switch but you might want to carry over a single
23 facility where you take the voice and put it into circuit
24 emulation over the same facility as the data or you might
25 want to have your separate facility where you use existing

1 voice transmission path that you have today with the legacy
2 RT and then have a new transmission path facility to your
3 OCD.
4 So there's a number of different combinations. So
5 I think it's just very critically important that the
6 Commission understands that a lot of these things are
7 looking at things very general. There's over 70 million
8 subscribers that are served by RTs.
9 And if you look at the number of RTs out there,
10 the amount of subscribers that are served by an RT, 28
11 according to -- King, 28 percent are less than 192
12 subscribers in RT and over 50 percent are under -- are
13 between 192 and 172 lines. So this is a very small serving
14 area that you have to amortize the costs of all of these
15 facilities.
16 So it has to be looked at on a case-by-case basis,
17 RT by RT basis, on what's the most economically viable way
18 to provide these advanced services to all of these
19 subscribers. If you don't do that, what's going to happen
20 is, the metro areas are going to have DSL and the
21 underserved communities are not. So we're going to create a
22 digital divide which --
23 MR. LUBE: Well, this is John Lube from SBC. If
24 you don't do what you said, ILECs will end up not deploying
25 technology in some of these places just because of that very

1 issue of a mandate that -- for a particular type of
2 technology or a particular approach that is not economical
3 in every situation.
4 MR. BOLTON: That's absolutely correct. So I
5 mean, as you know, we are a very R&D intensive company. So
6 what -- we just want to -- I guess our plea is as it's
7 always been is that we wouldn't want policy to stand in the
8 way of technology innovation.
9 MR. STANSHINE: I wanted to ask a question, but
10 let the gentleman speak first.
11 MR. SACKMAN: Well, this is Jim Sackman from AFC.
12 As many of you know, we are the guys that really supply a
13 lot of the RT equipment to the independents and the small
14 rural telcos who are rolling out DSL as fast as humanly
15 possible. But they're not under all of the restrictions and
16 have all of the problems that a major RBOC have, as well.
17 So you need to be aware that this is going on in the rural
18 environment to guys like my favorite friends -- Charlie
19 Gouder at Valley Tel, who's got .3 subscribers per square
20 mile. Now if he can do this, we can all do this, but we
21 have to all work together to provide economical solutions.
22 We can't burden these guys with such onerous
23 requirements if they can do it, because if he can do it we
24 can all do it.
25 MR. STANSHINE: My question, just to close, your

1 system for project pronto I gather, what is that, one OC3
2 interface coming out of it that carries voice and data?
3 MR. SACKMAN: You can do that, yes.
4 MR. STANSHINE: And in that case there might be
5 one DS-3 for voice and two for data or vice versa?
6 MR. SACKMAN: That's what we're doing today. It's
7 provisionable, but that's what we're doing today, yes.
8 MR. STANSHINE: Okay. Now with Alcatel you do
9 have what I guess was the 2012 that has an OC12 interface?
10 MR. RANSOM: That's correct.
11 MR. STANSHINE: And you can have one OC3 or three
12 SDS-1s for voice and three -- up to three STS 3Cs for data?
13 Is that correct on that particular --
14 MR. RANSOM: No. That's --
15 MR. STANSHINE: Not correct.
16 MR. RANSOM: The way it operates. we have one OC12
17 which one quarter of it, one STS-3s worth of traffic, is
18 used for the data.
19 MR. STANSHINE: Okay.
20 MR. RANSOM: One of those is used for the voice
21 and the other two are available for additional drops, DS3
22 drops --
23 MR. STANSHINE: Okay.
24 MR. RANSOM: -- from that terminal.
25 MR. STANSHINE: So if somebody deploys that system