

Competitors are overstating the impact of number portability! **PACIFIC*BELL**

A Pacific Telesis Company

“Seventy-five percent of the customers generally are not going to change their phone number unless there’s a big economic benefit”

- Royce Holland, MFS *

Even with number portability, and no other economic incentive, over 75% of business customers are not inclined to switch.

“...nearly half of potential customers surveyed said they wouldn’t switch to a new MCI local service if they couldn’t keep their numbers.”

- Michael D. Pelcovits, MCI *

Even with number portability and a 25% discount below Pacific’s prices, less than 50% of business customers are inclined to switch.

“Its an enormous barrier to entry to make someone change their telephone number.”

- Scott Rafferty, Washington Telecommunications Consultant *

Service discounts, brand, and bundling are key drivers beyond issues of number portability ... lack of number portability is not a barrier.

* “Telephone Numbers Hang Up Local Bell Rivals”, The Wall Street Journal, 1/13/95

Although residence and business customers may believe they are “more difficult to find” if their phone number changes, most callers will pursue them at their new number

When you call a business/residence and hear a referral announcement, what percent of the time do you hang up and immediately redial the new telephone number?

- One implication that has been put forth in discussions about requiring number portability is whether a business (or residence) is negatively impacted when a caller hears a number change announcement...
- When calling a business and hearing an announcement indicating a number has changed, the majority of respondents (56%) immediately hang up and dial the new number
 - The new number would be called 86% of the time
- When calling a residence, those results are even higher
 - 64% always call back immediately
 - 89% of all announcement calls being called

**Comparison of Pacific ConStat Research with MCI's Gallup and
MFS's AHF Marketing Research Telephone Surveys**

ConStat's approach represented a much more realistic replication of the customer's decision process, especially when compared to the MCI/Gallup research technique



- Respondents to the MCI research were expected to react basically to a “cold call” without having the ability to reflect upon their decision or to truly consider all aspects of the choices and their relative impact on their business
- MCI/Gallup survey was not discounted
 - Estimates of intention as collected in the relatively quick telephone interviews used by Gallup are often much higher than the subsequent market performance of the actual product or service
 - The ease of “saying yes” as opposed to “writing a check”, the desire to give “good news” to an interviewer or the impetus to end an interview as quickly as possible by giving rapid, often unreflected answers, all contribute to this research-related inflation
- In terms of the actual data collection process, ConStat's full profile conjoint analysis utilized a telephone-mail approach which better replicates the actual decision-making process rather than simply a telephone survey
- Comparisons between Pacific/ConStat's discounted results and the undiscounted results from the other study would be comparing “apples to oranges”

It is clear that any research approach that “leads them down the road” by emphasizing the negative impact and costs of changing a telephone number will cause respondents to be less likely to switch

- The MCI/Gallup questionnaire and questioning sequence may have directly influenced the results
 - Cannot be sure what the respondent was reacting to since the MCI study failed to clearly define the type/brand of alternative carrier that would offer local access
 - Some questions are order-biased in that the negative aspect of carrier switching (i.e., number changing) is mentioned before the positive aspect (i.e., discounts)
 - The effect of “negative positioning” of the number change scenario in the MCI research would be to suppress the likelihood to switch carriers given that a number change is involved

MCI's research did not consider all the factors involved in a customer's decision to switch service providers



- In a vacuum, one would expect that keeping a number is important or even “preferred” to having to change a telephone number.
- This is not a realistic setting, as other variables - including *price, brand awareness and perceptions, service bundling, quality of service* - are simultaneously considered when the decision to switch service providers is made

The MFS Intelenet Research performed by AHF Marketing Research appears to be similarly flawed



- Research was done simply by a telephone interview
 - Respondents to the MFS research were expected to react basically to a “cold call” without having the ability to reflect upon their decision or to truly consider all aspects of the choices and their relative impact on their business
- Study failed to clearly define the type/brand of alternative carrier that would offer local access
- Survey does not appear to have been appropriately discounted
- Survey did not adequately explain that the option of number referral would be available
- Two simple questions do not adequately cover the range of issues dealing with all factors involved in a customer’s decision to switch carriers
- The customers selected for the interviews were selected from a list “provided by MFS Intelenet” rather than neutral random samples

Release to Pivot

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Some design criteria considered by Pacific Bell:

- Solution should provide true Service Provider Number Portability. If the customer retains the original directory number, the networks should route using the original directory number.
- No negative impact to number exhaust.
- Should only apply to ported Directory Numbers (DN)

Some design criteria considered by Pacific Bell (cont'd):

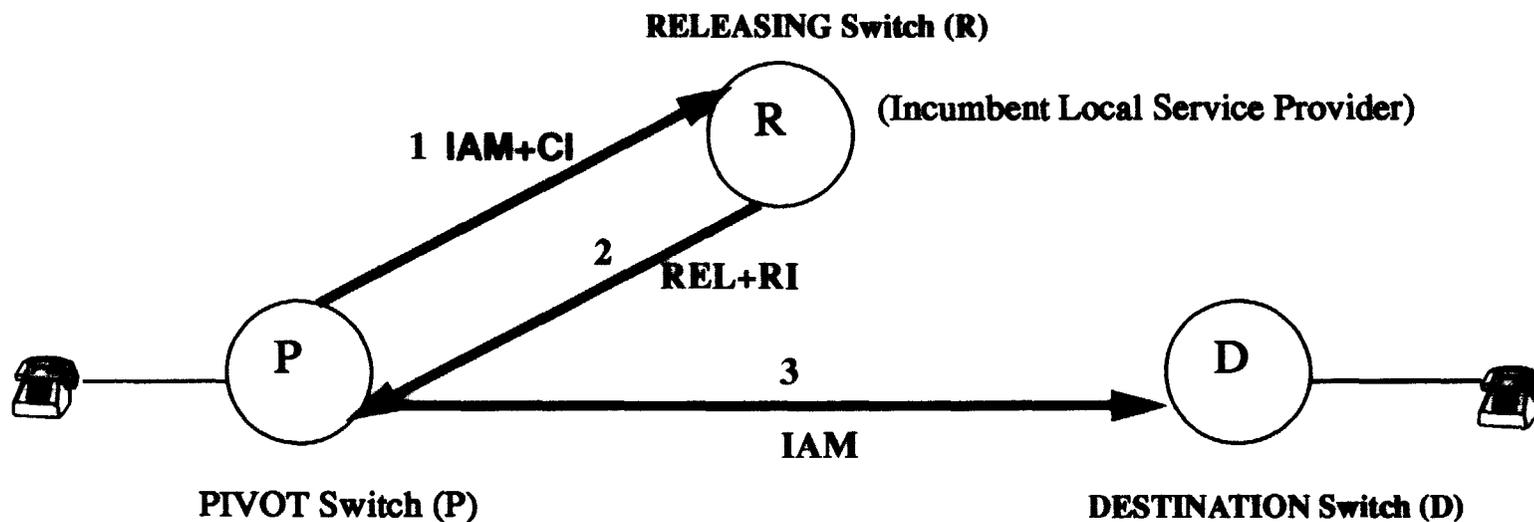
- Should be designed for both Local and IEC switches.
- Should not preclude other network providers from deploying any other type of solution.
- The information that is passed at the network interface should be standard for all service provider number portability solutions.

Release to Pivot (RTP)

- Generic network capability that is invoked to support service needs; not directly invoked by the end users.
- An RTP switch shall be able to provision RTP capability on a per Switch, per Point Code, per Trunk Group and per RTP capable service basis.
- An RTP switch may simultaneously process some calls using its Pivoting functionalities and other calls using its Release functionalities.

BASIC OPERATION OF RTP ROUTING

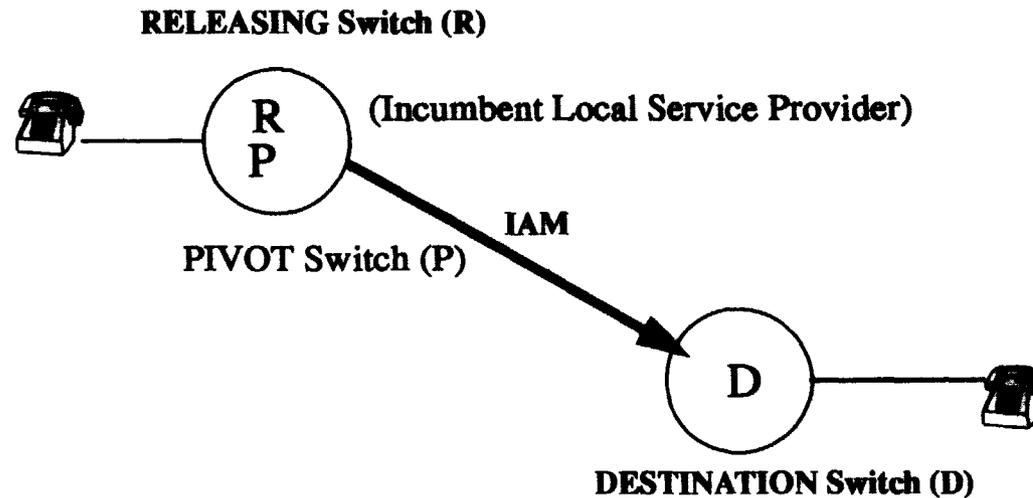
SS7 Signaling



IAM = Initial Address Message
CI = Capability Indicator
RI = Rerouting Information

BASIC OPERATION OF RTP ROUTING

Releasing Switch = Pivot Switch



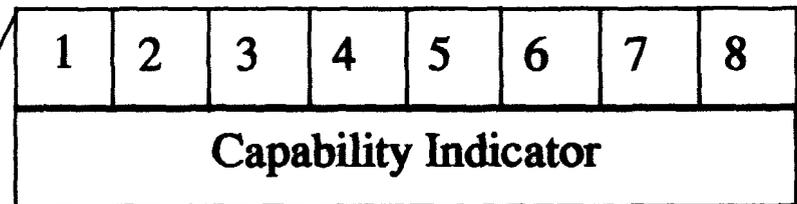
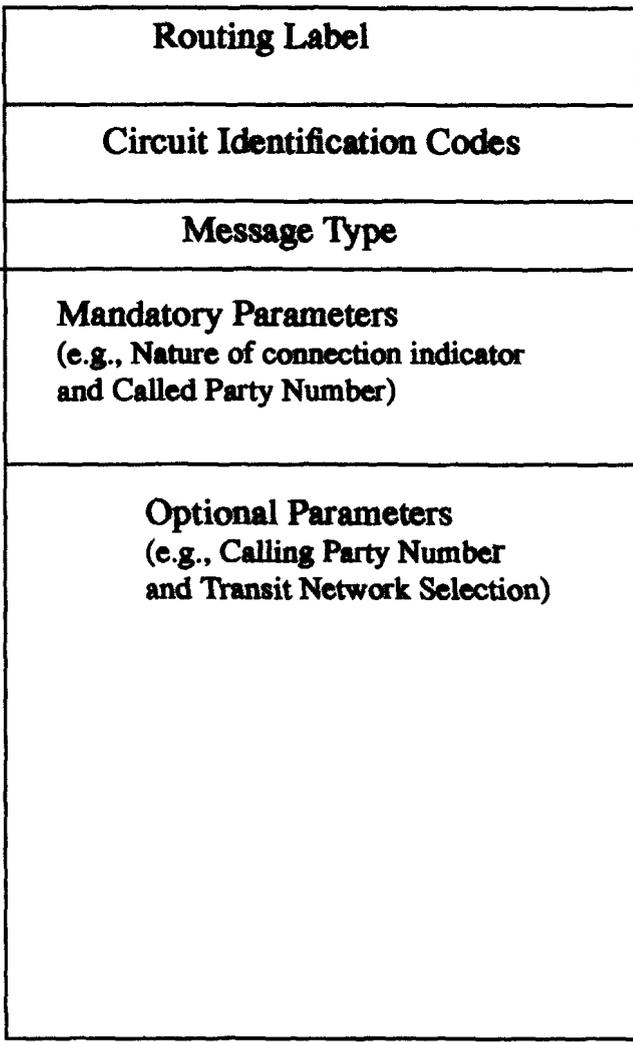
Note:

If D is the terminating End Office, then P sends D an IAM (standard).

If D is not the terminating End Office, then P sends D an IAM with the TNS and directory number.

RTP ROUTING CAPABILITY: IAM + CI (Capability Indicator) as proposed in GR-2857-CORE

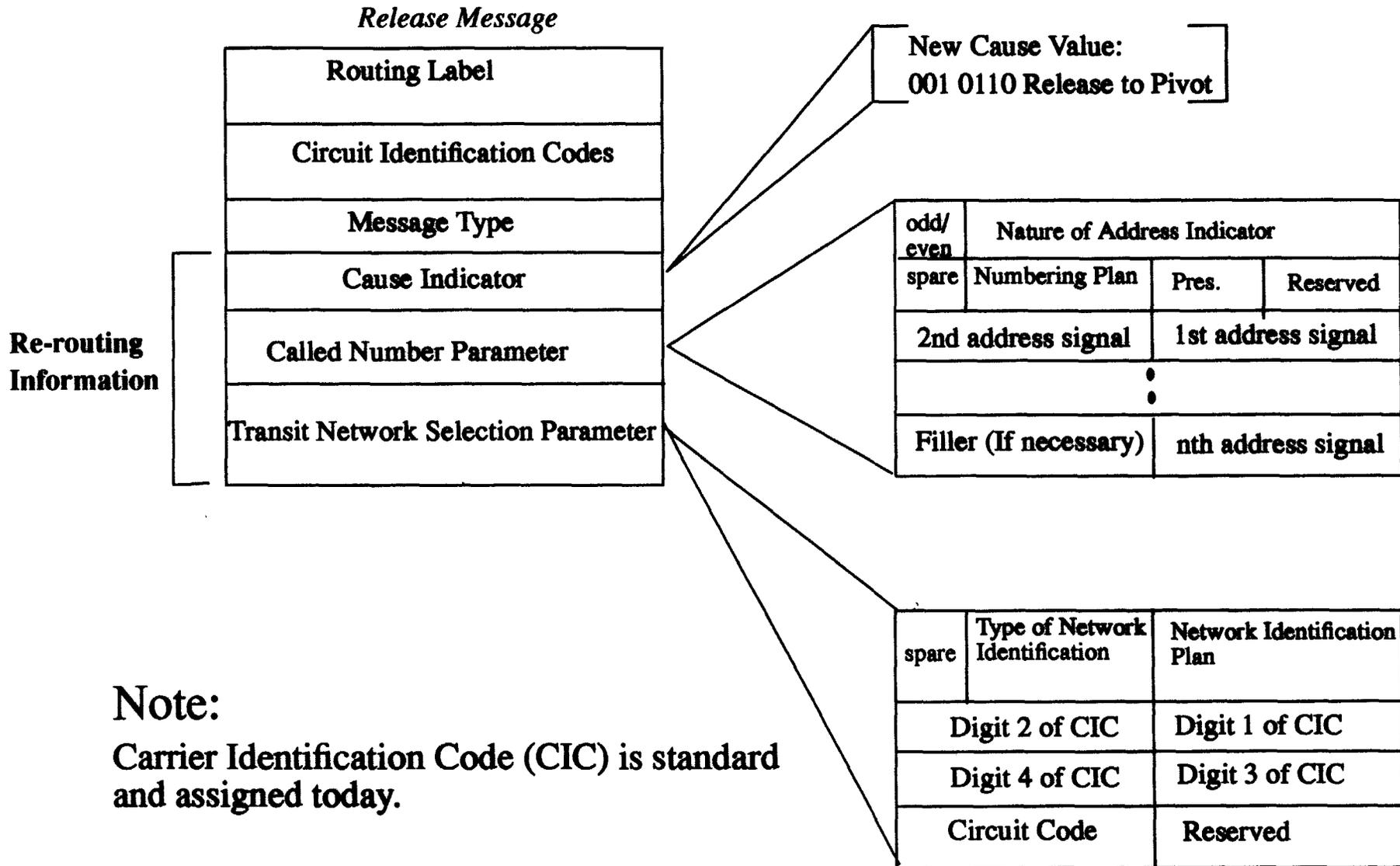
IAM Message



0000 0011
Other

RTP Allowed
Reserved or Spare

RTP ROUTING CAPABILITY: REL + RI (Rerouting Information) as proposed in GR-2857-CORE



RTP ROUTING CAPABILITY: IAM for Intermediate Pivot Switches

IAM Message

Routing Label
Circuit Identification Codes
Message Type
Mandatory Parameters (e.g., Nature of connection indicator and Called Party Number)
Optional Parameters (e.g., Calling Party Number and Transit Network Selection)

Transit Network Selection Parameter
(existing standard format)

spare	Type of Network Identification	Network Identification Plan
	Digit 2 of CIC	Digit 1 of CIC
	Digit 4 of CIC	Digit 3 of CIC
	Circuit Code	Reserved

Example of Pivot Switch Translation Tables to Route on CIC + Directory Number

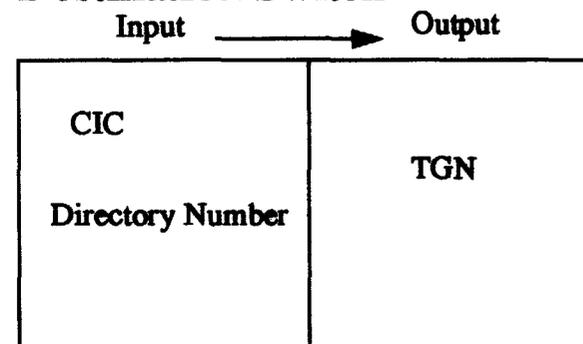
Table 1: CIC=288

NPA-NXX	TGN	CIC	CKT Code
415-542	2785	0288	xx
415-545	3458	XXXX	xx
510-823	8459	XXXX	xx
510-867	6783	0288	xx
510-284	2785	0288	xx
510-939	8550	XXXX	xx
510-955	8948	0288	xx

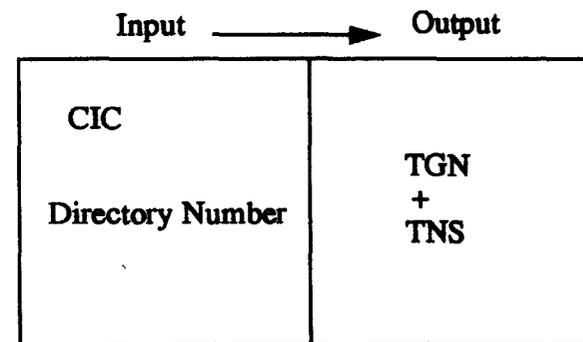
Table 2: CIC=222

NPA-NXX	TGN	CIC	CKT Code
415-542	8848	0222	xx
415-545	9837	XXXX	xx
510-823	9092	0222	xx
510-867	9444	XXXX	xx
510-697	7738	XXXX	xx
707-988	9092	0222	xx
408-889	2753	XXXX	xx

Pivot Switch Translations to: Destination Switch

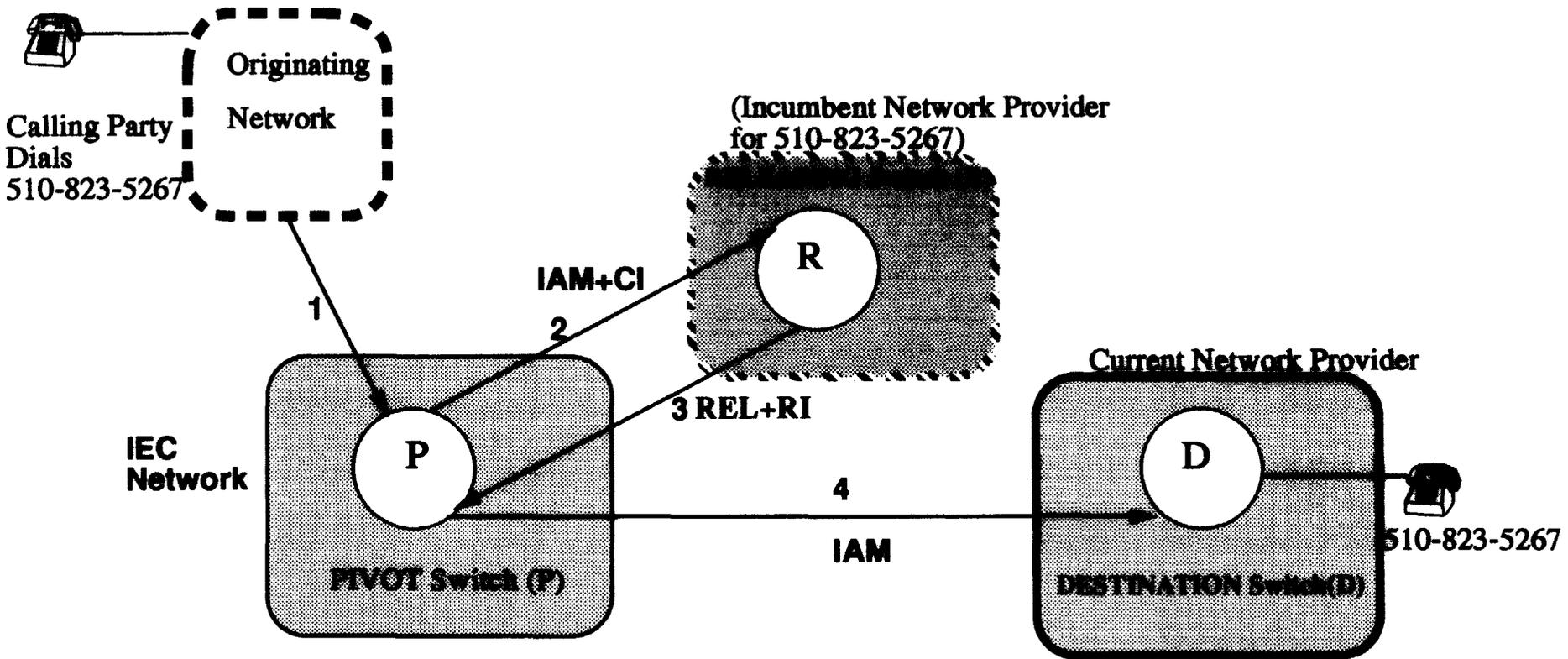


Intermediate Switch



1. Pivot switch received Rel+RI (TNS+DN).
2. Translations are based on CIC + DN
3. Output is TGN or TGN + TNS

InterLATA Example of RTP ROUTING

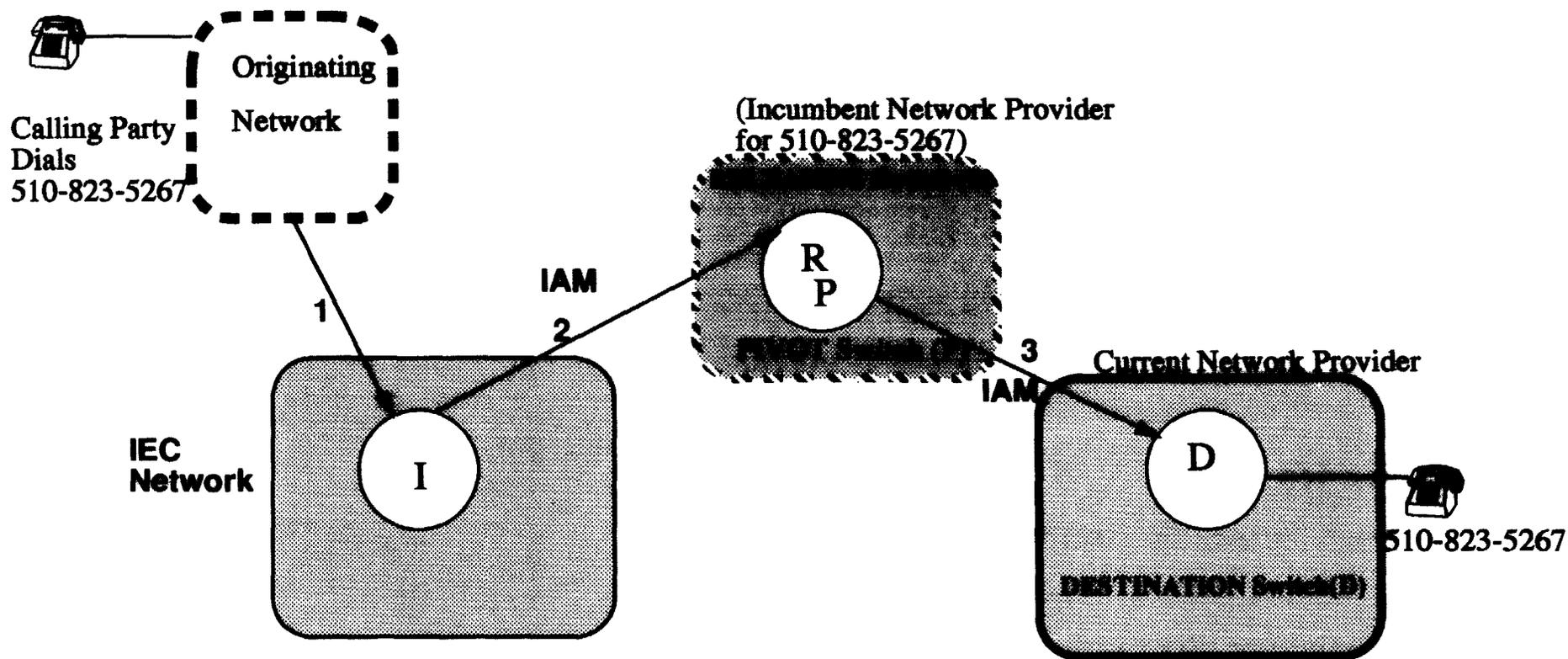


Call Flow:

1. Originating Network hands call to IEC network based on PIC.
2. IAM + CI sent from switch P to switch R indicating P is RTP capable.
3. Switch R sends a REL + RI to switch P with DN, CIC and cause indicator = RTP.
4. Switch P sends IAM to switch D.

CI = Capability Indicator
RI = Rerouting Information
IAM = Initial Address Message

Another InterLATA Example of RTP ROUTING

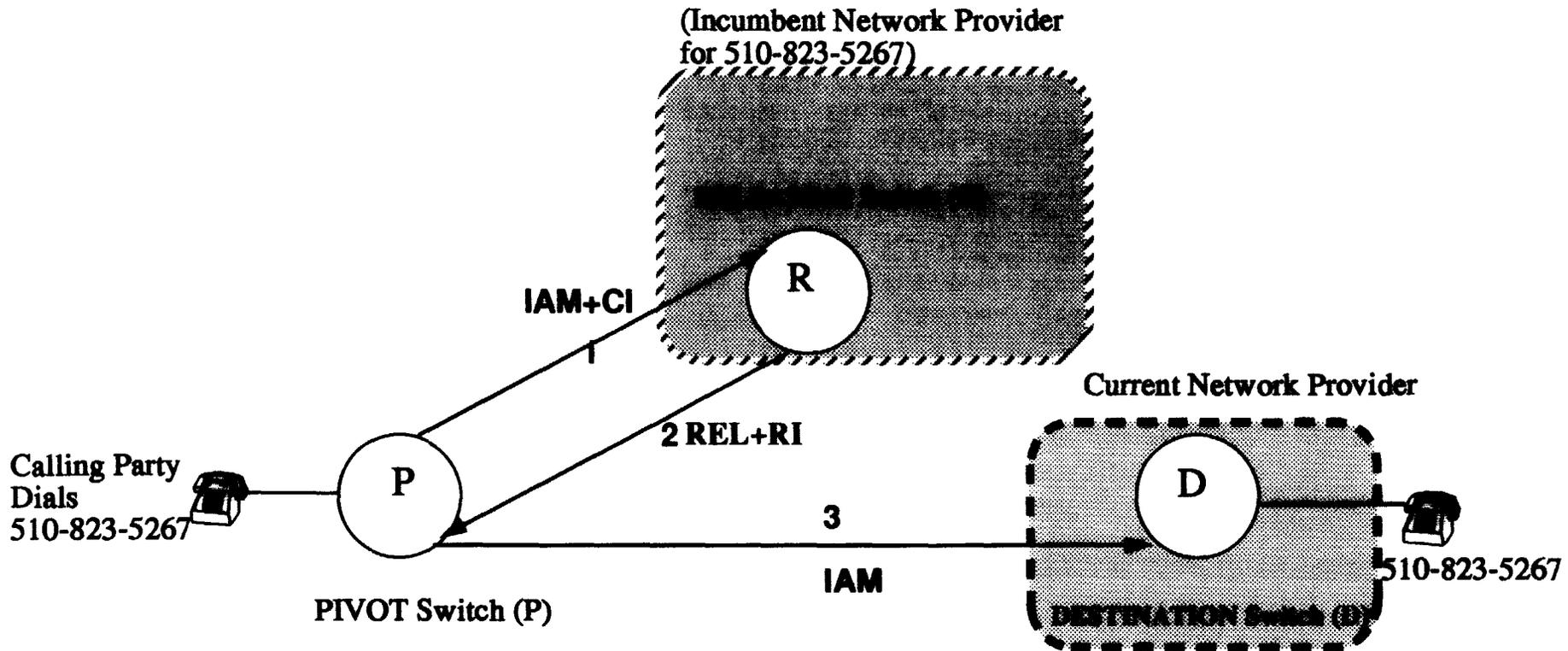


Call Flow:

1. Originating Network hands call to IEC network based on PIC.
2. IAM sent from switch I to switch R.
3. Switch R releases to itself, and is the pivot switch (P).
4. Switch P sends IAM to switch D

CI = Capability Indicator
RI = Rerouting Information
IAM = Initial Address Message

IntraLATA Example of RTP ROUTING



Call Flow:

Originating Network hands call to network based on DN.

1. IAM + CI sent from switch P to switch R indicating P is RTP capable.
2. Switch R sends a REL + RI to switch P with DN, CIC and cause indicator = RTP.
3. Switch P sends IAM to switch D

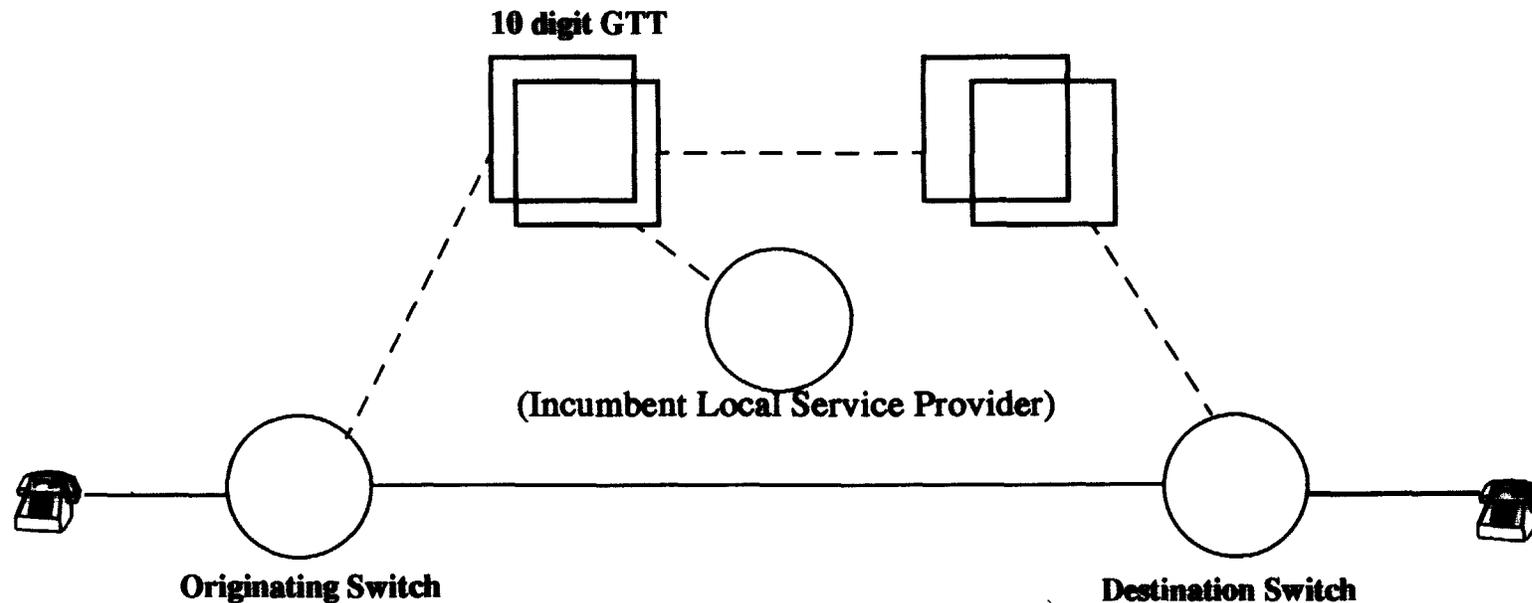
IAM = Initial Address Message

CI = Capability Indicator

RI = Rerouting Information

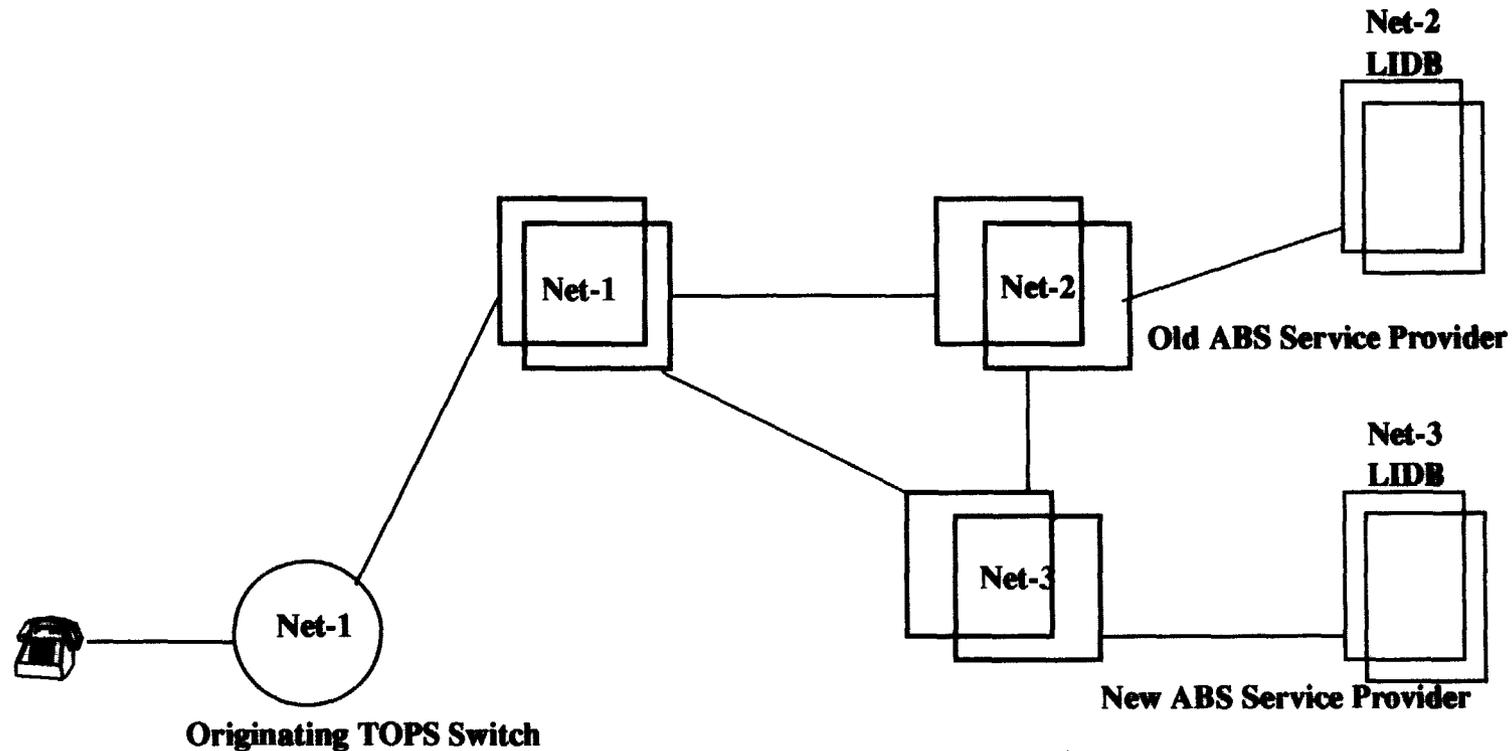
CLASS Routing

Will work with 10 digit GTT



1. CLASS GTT entries today are 6 digit ranges (e.g. 415-542 thru 415-546).
2. With number portability some customers will move their CLASS service. This will require 10 digit GTTs at STPs. Issues: provisioning, capacity, cost.
3. GTT table entry capacity will be an issue with most vendors and should be analyzed for technical and economic impacts.

Potential ABS/LIDB GTT entry problem



1. ABS/LIDB GTT entries today are 6 digit ranges (e.g. 415-542 thru 415-546).
2. With number portability some customers will move their ABS service. This will require 10 digit GTTs at STPs. Issues: provisioning, capacity, cost.
3. GTT table entry capacity will be an issue with most vendors and should be analyzed for technical and economic impact.

Summary:

- **True Service Provider Number Portability**
 - **Customers retain the original directory number**
 - **Networks route using the original directory number and network information.**
 - **Only applies to ported Directory Numbers**
- **Does not affect reliability of calls to non-ported numbers**
- **Only requires ISUP messages**
 - **Minimizes effect on SS7 network**
- **1 database query per ported call**
- **No negative impact to number exhaust**

Summary (cont'd):

- **RTP is designed for Local and IEC switches and leads to more efficient routing**
- **Proposed RTP parameters (Capability Indicator and new cause value for REL) are specified in GR-2857-CORE**
- **Other parameters (TNS, CIC, DN) already exist and are standard**
- **Does not preclude other network providers from deploying other solutions**
- **Pacific Bell is working to set up a technology trial with one of our vendors**

Key Learnings

- The information that is passed at the network interface should be standard for all number portability solutions.
- ABS/LIDB and CLASS routing: **Potential GTT table entry exhaust** with Number Portability
- SMS is a major industry challenge