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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

James Schlichting
Chief, Competitive Pricing Division
Federal Communications Commission
1919 M Street, NW, Room 518
Washington, D.C. 20554

October 10, 1996

Dear Mr. Schlichting;

I wanted to take this opportunity to thank you for the time you and your staff spent with us going over our work-in-progress on the Transport Interconnection Charge (TIC) analysis. As we discussed, attached are more detailed descriptions of the components of the TIC and possible separations impacts that have been identified. The current version is attached for your information.

USTA's industry committee is considering various methods to address the TIC cost components. We will be forwarding to you late next week a discussion of possible options for reassignment and recovery of these components.

If you have any question or would like to discuss this analysis further, please give me a call at (202) 326-7266.

Sincerely,

Frank G. McKennedy
Director-Legal and Regulatory Affairs

cc with attach:
Doug Slotten
Jay Atkinson
Rich Lerner

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ELEMENTS UNDER INVESTIGATION

- 80% OF TANDEM REVENUE REQUIREMENT
- CCS/STP COSTS ALLOCATED TO TANDEM SWITCHING
- HOST/REMOTE CONFIGURATIONS
- CENTRAL OFFICE TERMINATION COUNTS
- COE MAINTENANCE MISALLOCATIONS
- ANALOG END OFFICE TRUNK SWITCH PORTS
- REDEFINED TANDEM SWITCHED TRANSPORT
- TRANSPORT AVERAGING, COST ALLOCATIONS AND COST RECOVERY
- OTHER AREAS UNDER INVESTIGATION

80% OF TANDEM SWITCHING COST

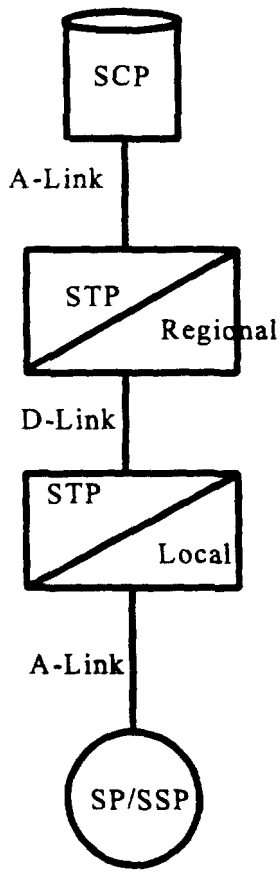
The FCC in REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING, CC Docket No. 91-213, issued October 16, 1992, paragraph 25, indicated "in order to ease the impact of a rate structure change on small IXCs, however, we prescribe that the tandem element initially recover only twenty percent of the current tandem revenue requirement, with the remainder of the revenue requirement recovered through the interconnection charge, and find that such a rate is just and reasonable."

COMMON CHANNEL SIGNALING

As accurately outlined in FCC 96-325 (para. 455), "Signaling systems facilitate the routing of calls between switches." The major components of the signaling system are:

1. Service Switching Point (SSP)
2. Signaling Transfer Point (STP)
3. Service Control Point (SCP)
4. Signaling Links

The FCC ordered that eighty percent of the tandem switching category be recovered in the Interconnection Charge. Consequently, it is the portion of the signaling network that is categorized to the tandem that is recovered by the interconnection charge. Typically, this consists of the STPs. The costs of the SCPs are recovered by LIDB, 800 and other data base charges. The SSPs are categorized to Local Switching (3AO). The associated signaling links, while not categorized as tandem, are assigned by Part 69 rules to the transport category.



Common Channel Signaling

3I52D-Service Control Point (SCP)/Integrated Service Control Point (ISCP) associated with Common Channel Signaling

800/LIDB
and other Data Base Charges
Recover SCPs

Tandem Switching
3152Z-Signal Transfer Point (STP) Digital Switching

7502Z-Processor that functions exclusively with a Signal Transfer Point

315BO-SS7 equipment at a through switched
Class 4/5 end office
(Split between 3A0 and 2A1)

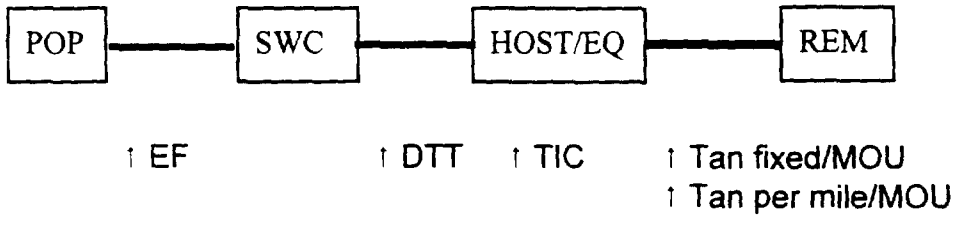
Local Switching
315AO-Signaling System 7 equipment at a Class 5 end office

HOST/REMOTE CONFIGURATIONS

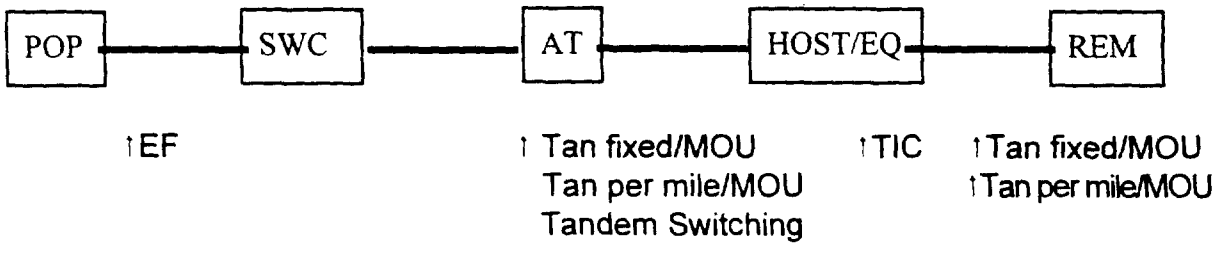
The under recovery of host/remote configurations is similar to the under recovery of tandem switching costs -- only a portion of the host/remote revenue requirement is recovered through the tandem fixed and per mile rates. The difference is included in the TIC.

For service to a remote switch, tandem fixed and per mile/per MOU charges apply for use of the facilities from the host to the remote. This structure was ordered by the FCC in its July 23, 1993 First Memorandum Opinion and Order on Reconsideration.[1] The tandem fixed and per mile elements apply to host/remote configurations for both tandem-routed and direct trunk transport customers. The following diagrams illustrate the rating of local transport host/remote configurations:

<u>Dedicated to End Office</u>



<u>Common to Access Tandem</u>



[1] Transport Rate Structure and Pricing. First Memorandum Opinion and Order on Reconsideration, CC Docket No. 91-213, 8 FCC Red 5370 (July 21, 1993) at 10-14.

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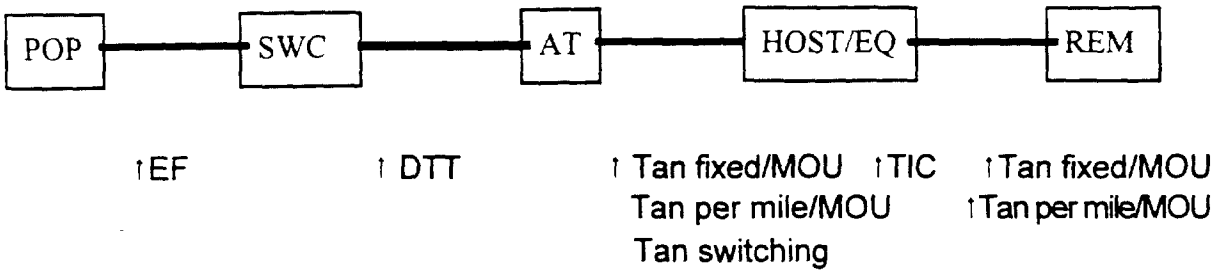
Dedicated to Tandem



In Parts 36 and 69 host/remote circuit equipment and cable and wire facilities (C&WF) have their own categories, and are therefore easily identified for revenue requirement purposes.

Part 36.126(f)(1) - Host/Remote Message Circuit Equipment-Category 4.3 states that host/remote message circuit equipment includes message host/remote location circuit equipment for which a message circuit switching function is performed at the host central office associated with cable and wire facilities as described in 36.152(c).

Part 36.126(f)(1)(I) states that the category 4.3 costs of host/remote circuit equipment assigned to message services for the study area is apportioned among the exchanges, interstate toll, and interstate toll operations on the basis of the assignment of host/remote message cable and wire facilities as described in 36.157.

Part 36.157 - Host/Remote Message C&WF-Category 4 states that the cost of host/remote message C&WF excluding WATS closed end access lines for the study area is apportioned on the basis of the relative number of study area minutes-of-use kilometers applicable to such facilities.

Part 69.305(b) (C&WF) and 69.306(c) (circuit equipment) assign host/remote message investment to transport.

CENTRAL OFFICE TERMINATION COUNTS

Part 36.126 requires that interexchange trunk investment is assigned to Message Joint, Interstate PL and Intrastate PL and allocated based on termination counts.

In the course of developing the basic studies of central office circuit equipment, it is possible to directly identify by category those costs associated with private line and message services. In this way, the circuit equipment study process develops specific jurisdictional costs associated with private line services and those message services that are not multi-jurisdictional in nature. However, section 36.126 (e)(3)(I) of Part 36 of the FCC Rules dictates that the costs of interexchange circuit equipment will be assigned to categories based on the average cost per termination. Within the interexchange circuit equipment costs, all categories except Message Joint are jurisdictional pure and could be directly assigned to jurisdictions if it were permitted by the Part 36 rules. For the Message Joint investment classification, traffic usage factors determine the final jurisdictional allocation. The distribution of costs to categories and jurisdictions based on direct identification would reduce the Transport Interconnection Charge (TIC) by reassigning costs to intrastate and interstate (Common Line, Local Switching and Special Access).

C.O. EQUIPMENT MAINTENANCE MISALLOCATION

Part 69.401(b) states that COE Switching, COE Operator Systems and COE Transmission (Accounts 6210, 6220 and 6230) shall be apportioned among the interexchange category and access elements on the basis of the apportionment of the total COE investment. This results in a portion of COE maintenance expense for local and operator switches allocated to Common Line, Transport and Special access, where there is no switch investment to maintain. This non specific approach to the assignment of these expenses, has resulted in a net over assignment of expenses to the TIC. A more cost causative approach is to assign these expenses to the Part 69 elements based on the specific assets being maintained.

COE Switching Expenses Account 6210

COE Switching expenses are being incurred to maintain two categories of equipment, the local dial switch and the tandem switch. Under existing rules these costs are assigned to Common Line, Local Switching, Local Transport, Information, Private Line and Interexchange elements. It would be more cost causative to assign COE Switching expenses to the Transport element based on a relationship of interstate tandem switching investment assigned to the Transport element to total Part 69 interstate Switching investment. The remainder of the expenses in this category would be assigned to the Local Switching element.

COE Operator Expenses Account 6220

COE Operator expenses are being incurred to maintain operator equipment. This equipment is assigned to two elements in Part 69, Information and Interexchange. In some companies a third element, Operator Transfer, has been established. Under existing rules these expenses are assigned to Common Line, Local Switching, Local Transport, Information, Private Line and Interexchange elements. A more cost causative approach is to assign these expenses to the Part 69 elements based on the equipment being maintained. Therefore, COE Operating expenses would be assigned to the Information, Interexchange and Operator Transfer elements based on the relative relationships established from the assignment of the Operator investment to these elements.

COE Transmission Expenses Account 6230

COE Transmission expenses are being incurred to maintain equipment found in most of the existing Part 69 elements except Billing and Collection. Rather that using the existing

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composite, a more cost causative approach is to assign these expenses to the Part 69 elements based on the equipment being maintained. Like the other categories, COE Transmission expenses would be assigned to the Part 69 elements based on the relative relationships established from the assignment of Transmission investment to the Part 69 elements.

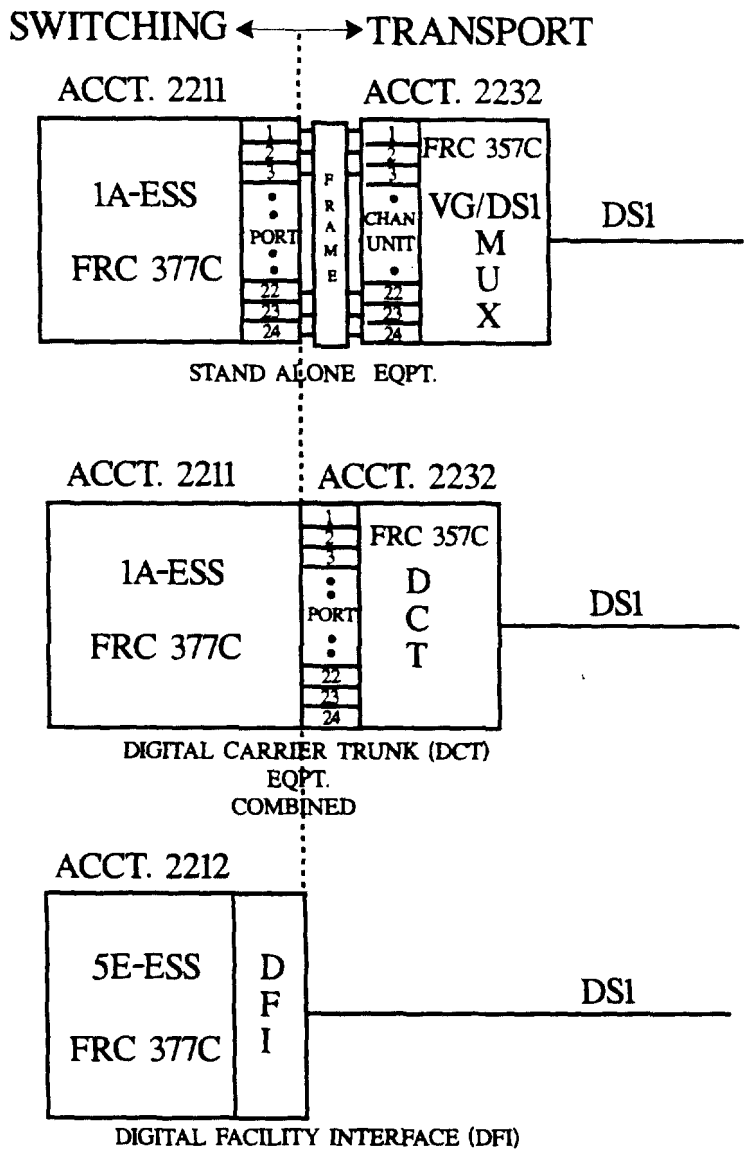
By using the above approach, costs will be removed from the Common Line, Access and Transport elements and will be reassigned to the Switching element.

ANALOG END OFFICE TRUNK SWITCH PORTS

When a call is carried on a DS1 transport (Direct of Common) or higher facility from an IEC to the terminating local switch, the DS1 signal must be broken down into a form (DSO) that can be processed in the switch. This function can be performed through the use of a standard DS1/Voice Grade multiplexer and 24 analog trunk side ports or through the use of a Digital Carrier Unit (DCT). The DCT provides a lower cost alternative when 24 trunks (DSOs) interconnect the switch by combining the functionality of a DS1/Voice Grade multiplexer and 24 analog trunk port.

In the analog switching environment, such as with an 1AESS switch, the costs of performing this function have been primarily assigned to transport, (FRC 357C, USOA Acct. 2232). In a digital switching environment, as with the 5ESS and DMS switches, these costs are assigned to Local Switching (FRC 377C, USOA Acct. 2212).

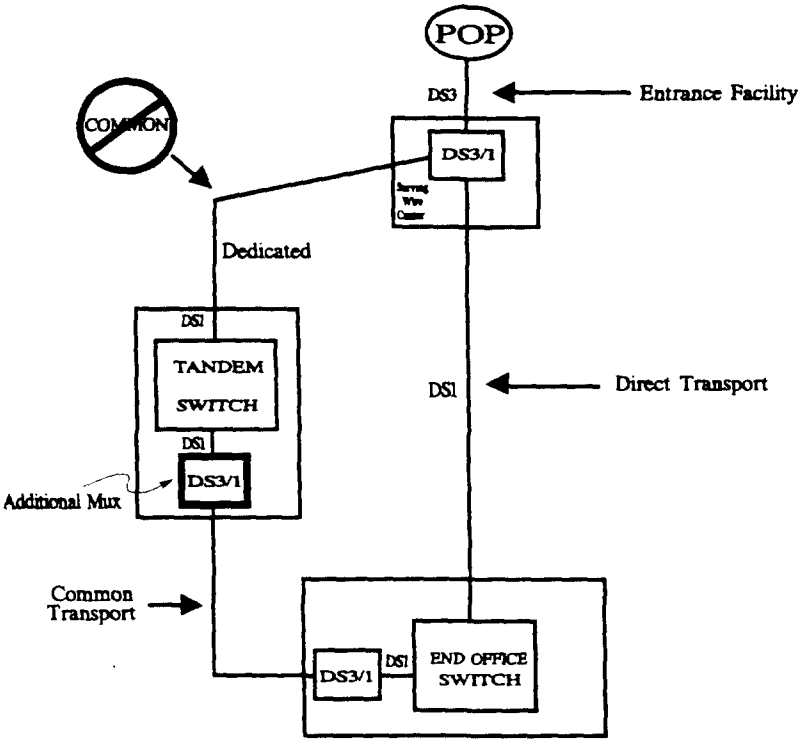
This function is one that is not required in the special access environment, so consequently, its costs are not reflected in the special access prices - and by extension, are not reflected in Local Transport prices. The analog switches account for approximately 25% of the RBOC lines in service (ARMIS 43-07).



REDEFINED TANDEM SWITCHED TRANSPORT

In the Report and Order in Docket 91-213, adopted in September of 1992, the Commission adopted an "interim" bundled per-minute rate structure for tandem-routed traffic, which encompassed the entire path needed to transport tandem-switched minutes between the POP SWC and the LEC EO. However, this path utilizes two different, and separate, types of facilities, which should be unbundled for rating purposes. The bundled structure, priced according to Commission rules, underestimates the costs of the tandem route and contributes to the TIC. The two parts of the tandem route were viewed individually to estimate the magnitude of TIC costs that are associated with the mandated bundled structure and pricing rules.

In the first part of the tandem route, between the POP SWC and the access tandem, facilities are actually dedicated, in the same manner as DTT, to each IXC. Since these are physically dedicated facilities, they should be priced in the same manner as DTT. Estimates of revenues associated with pricing the SWC-AT facilities at DTT rates, including rates based on airline miles between the SWC and AT, were developed for quantification.



In the second part of the tandem route, between the access tandem and the EO, "common" facilities are used that carry various types of traffic including interstate, state and local. This segment of the network should be priced on a per minute basis to reflect the mixed use nature of its traffic. However, the per minute rates ordered by the Commission should be modified in two ways. First, since the current TST per-minute fixed rate is based on one mux when a DS3 is used, the rate should be increased to reflex another DS3 mux, as one is needed at the EO and one is needed at the tandem switch. Second, the use of 9000 mou per VGE in the TST rate development process overstates actual usage on the tandem route. "Usage" more representative of the actual usage should be incorporated in the rate

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development.

Lastly, an adjustment may be made to account for a difference in air miles from the current bundled structure (using SWC-EO air miles for TST rating) and the unbundled structure (using per minute rates only for the portion between the AT and the EO). The difference in revenues between the current TST pricing structure and the unbundled structure described above are in the TIC.

TRANSPORT AVERAGING, COST ALLOCATIONS AND COST RECOVERY

The local transport equal charge rates, prior to price caps and the transport restructure, were derived from a "revenue requirement" which was the result of Commission mandated rules for the allocation of investments and expenses. This mandated cost allocation process predominantly utilized (and still does for data reported in ARMIS) general categorizing and averaging of costs to a great extent - averaging across technologies, geographical areas (e.g., rural, suburban, urban), services, and jurisdictions. The key drivers in the process were plant investments, with expenses generally following the allocation of plant. Because there were basically only two rate elements for switched local transport, the per minute termination charge and the per minute-mile facility charge, the rates could deviate very little, if at all, from the rate levels resulting from the cost allocation rules.

Special access rates, on the other hand, while adjusted to equal a total special access revenue requirement, were more heavily based on a unit investment approach which more specifically identified the actual plant used for each service. The unit investments were then used as a basis for loading appropriate overheads. In addition, under the cost allocation process, high cap facilities could be directly identified and assigned to the special access revenue requirement category.

Once rates were set under price cap rules, beginning in 1991, the direct link to revenue requirements was broken, but the price cap basket and banding limitations allowed relatively little annual deviation from original rate-of-return rate levels and rate relationships. The transport restructure was implemented at the very beginning of 1994 and was based on 1993 rates and 1992 demand. The transport restructure repriced switched transport services based on special access high cap rates. To a great extent, the TIC, which was the resulting difference in revenues between the two pricing schemes, represented the difference in costing methods between the two services - the local transport rates based predominantly on cost allocation rules that over assigned costs to local transport and the high cap rates based more on a direct identification of costs. Much of the TIC, therefore, represents the averaging of costs across technologies, geographies, and jurisdictions (state and interstate) that were inherent in the cost allocation rules that determined the equal charge rates.

A direct identification of local transport costs would result in fewer costs than those produced by cost allocation rules. For example, in the cost allocation process the first step is the combination of plant accounts which are then categorized into three general plant categories -- exchange loop, exchange trunk and interexchange trunk. These categories are then subcategorized into message and private line for jurisdictional separations

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purposes. Although the detail is available at the subaccount level prior to categorization, this detail is lost in the subsequent categorization and separation processes. A detailed analysis utilizing a direct cost approach demonstrates that the cost allocation rules assign more investment to local transport than are actually utilized in provision of the service. The difference in costs is currently in the TIC, even though these costs are actually incurred to provide local services, state services, and/or interstate services other than local transport.

An additional component of the TIC can also be identified. Circuit equipment and cable and wire facilities serving longer haul traffic have an embedded Part 36 cost that is many times the cost developed by using the special access costing methodology. The cost of hauling traffic to scattered local dial switches in remotely populated areas is several times more that the costs of hauling an equivalent unit of traffic in the larger cities at special access rates. This cost differential has been averaged over the rate charged to all customers as part of the TIC. Most of the longer haul traffic is carried on "interexchange" facilities as defined in the Part 36 categorization. The costs associated with this traffic are defined by the FCC's rules and are associated with the Part 69 transport element. These costs are well documented in the ARMIS process. The cost per unit of traffic using interexchange facilities is significantly higher that the cost per unit of traffic hauled over the exchange, more urban type of facilities for some companies. The cost differential per unit of traffic is also part of the TIC.

OTHER AREAS UNDER INVESTIGATION

In addition to the previously identified TIC components there are additional areas which are still under investigation at this time. These include the following:

1. Historical Part 36 and 69 over allocation of costs to the Interstate jurisdiction in general, and to Local Transport in particular.

2. A "Depreciation Transition Component" which may be needed to transition the depreciation reserves accrued under traditional regulated depreciation to reserves reflective of the economic lives allowed in TELRIC cost studies.

3. Specific jurisdictional separations procedures under investigation:
   a. Components associated with improved "Cable and Wire" and "Exchange Circuit Equipment" separations methods.
   b. Interstate allocation of COE maintenance expenses.