equipment memorandum

AUXILIARY SERVICES

EM-ASI-1

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GENERAL TELEPHONE & ELECTRONICS

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AUX-1. Conference service - "Meet Me" type (connector access).



AUX-2. Conference service - "Meet Me" type (selector access).

AUX-1. CONFERENCE SERVICE - "MEET ME" TYPE (CONNECTOR ACCESS)

A conference service allows two or more parties to talk, as well as listen, over a common path. The "Meet Me" type conference service is so named, because each participating party is notified in advance that a conference is to be held at a designated time. When the designated time arrives, each party dials a prescribed conference number and is switched into the conference to "meet" the other parties.

To allow all participating parties to enter, withdraw, and re-enter at will, "Calling Party Release" connectors are required. This type of a connector is furnished with type 25, 50, and 75 switchboards. The only limit to the number of participating parties in the "Meet Me" conference service is the number of connectors available. However, since each conferring party seizes and holds a connector during his participation in the conference, it is recommended that the number of conferring parties should not exceed 75% of the total number of connectors in the system.

The ''Meet Me'' type conference service is so engineered that it can be added to any switchboard having 'Calling Party Release' connectors. On type 25, 50, and 75 switchboards, no additional equipment is necessary to provide ''Meet Me'' conference service.

The conference coil (relay H) is an integral part of the standard alarm relays circuit (H-51588-A, figure 2). In addition to the strictly local conference feature, this circuit now provides for extending a trunk call to the "Meet Me" conference circuit. This feature can be provided with a type 33A19, 33A35, or 51 attendant cabinet.

When the trunk and station conference service is to be provided utilizing the type 38A19 or 33A35 attendant cabinets, both cabinets are equipped with a jack and busy lamp. The attendant extends the trunk caller to the conference jack. Another cord of the cabinet is then used to call the local conferees. The conferees dial 80 and are connected to the trunk. When the connection is made, the trunk cord circuit supervisory lamp goes out. When all conferees release, the lamp goes on. This informs the attendant to disconnect the trunk. The busy lamp used in this circuit indicates that the conference circuit is busy locally; a trunk call should not be extended.

The type 51 attendant cabinet can also be equipped for trunk access to the "Meet Me" conference. The attendant extends a trunk call by dialing the unpublished connector terminal.

After the trunk is extended to the connector terminal, the attendant retires from the trunk and calls the local conferees. By dialing 80, the conferees are connected to the trunk caller on the conference circuit. If code call supervision is not provided on the cabinet, the attendant can have a lamp for conference busy indication. A lighted busy lamp indicates that a trunk call should not be extended to the conference circuit.

When the last conferee hangs up, the supervisory lamp lights and informs the attendant to disconnect the central office trunk. NOTE: Only one central office trunk can be extended to the conference circuit at one time.

AUX-2. CONFERENCE SERVICE - "MEET ME" TYPE (SELECTOR ACCESS)

This type of service is especially suitable for initial selector-engineered systems. It is designed to allow two or more stations to participate in a conference with additional stations entering at any time. At the designated time, each conferring party dials the prescribed number. The selector access allows the participants to enter, withdraw, and re-enter at will. And restricted service selectors can be used to limit the number of parties capable of seizing the selector conference level. Since each conferring party holds a selector busy during participation in the conference, it is recommended that the maximum number of conferring parties should not exceed 75% of the total number of selectors (if there are 10 or less selectors in the system).

Circuit H-41510-A is arranged to limit the number of conferring parties to 10; its apparatus is designed for jacked-in mounting and usually mounts on the power shelf. For separate battery feeds, which allow more than 10 stations in conference without excessive transmission loss, refer to circuit H-73171. The apparatus of this circuit is arranged for relay rack mounting.



AUX-3. Group conference.

AUX-3. GROUP CONFERENCE

This service is arranged for conferences in which the participating parties have not been notified in advance, as in the "Meet Me" type. It is designed for simultaneous ringing of the conference group and priority cut in on busy lines. This latter feature is highly desirable, because it enables the unit to signal emergencies.

The conference group consists of 10 stations but can be expanded to 20 stations by wiring two groups in multiple. Any station in the conference group can initiate a conference and can also receive and originate normal party calls when not engaged in conference. By additional wiring, the service can be modified so that any station in the party system can initiate conference calls to a select group. As soon as the conference unit is seized, the connector releases, leaving all conference lines on a common talking circuit. This feature enables the connector to process other calls while the conference is in process.

To initiate a conference, the originating party dials the designated conference number. All idle stations in the group are signaled simultaneously with an uninterrupted ring which continues until the individual stations answer. Busy lines are released from their former connections and are connected automatically to the conference. Any station may withdraw from the conference at any time, thereby leaving his line free for originating or receiving normal calls. NOTE: Once a party has withdrawn, he cannot return to that conference. When the last party has hung up, the conference unit releases.

The unit, itself, is fastened to a floor mounted rack and is optional equipment for type 25, 50, and 75 switchboard installations. Additional main distributing frame equipment is usually needed to facilitate assignment or changes in the conference group. When more than one group is used (i.e., more than 10 stations are to be rung simultaneously), heavy duty ringing equipment is required. For a 24 volt system, circuit H-75257 (similar in operation to circuit H-61146) may be used. If it is desired to have group conferences arranged for either partial or entire group conference, circuit H-73494 should be used. This circuit is arranged for use with or without a desk annunciator panel H-870505, which provides line keys for partial group selection and line lamps to indicate which lines have answered the conference. Circuit H-73494 is also used for "Crash Alarm" type conference and "Fire Alarm" systems.

AUX-4. PROGRESSIVE TYPE CONFERENCE SERVICE (SELECTOR LEVEL OR CONNECTOR NUMBER ACCESS)

This type of service is designated "Progressive," because the calling party dials, in succession, the individual stations in the conference group. It is also specifically designed to give the calling party the power of limiting the number of participating stations; no station can enter the conference unless it is dialed in by the calling party. As each station answers, it is automatically connected to the conference talking path.

Conferences can be initiated by any station in the system; however, the number of stations which can seize the unit is limited by means of restricted service selectors.



AUX-4. Progressive type conference service (selector level or connector number access).

By employing a switching key at a masterstation, the selector (or connector) access to the conference unit may be eliminated; this scheme will allow only the masterstation to initiate conference calls.

Normally, the progressive, group-type conference service is confined to a maximum of 20 predetermined stations, but jumpering facilities provided on the conference unit permit removals and additions to the conference group. The unit can be accessed by either a selector or switch-through connector.

To seize the conference unit, the calling party dials the prescribed selector level (or connector number in a connector system) reserved for this purpose. Then, the last two digits of each individual station are dialed. As each party answers, the switch mechanism automatically releases, allowing the calling party to dial another station. However, the talking circuit is maintained and the called party is requested to hold the line until all parties are called. Any called party may withdraw, but he cannot return during the conference. Meanwhile, the calling party is able to call additional stations. If a called line does not answer or is busy, the caller need not hang up but only momentarily flash his hookswitch before dialing the next number. Parties who have already answered will remain connected even though the calling party has hung up. The conference is terminated when all the participating parties have hung up.

This type of conference is available only for 48 volt selector and/or switch-through connector equipment.

AUX-5. TRUNK AND STATION CONFERENCE (MANUAL)

With the combination trunk and station call arrangement, using either the 33A19 or 33A35 switchboard, the operator plugs in the cord circuits, extending both the trunk and local parties for conference.

Assume, for instance, that a trunk and then a conference call are to be handled by the switchboard operator. When the trunk call is received, the operator plugs the "trunk and station" end of the cord circuit into the trunk jack of the jack field and converses with the calling party. Next, she extends the cord circuit by plugging the "station" end into the station jack multiple of the jack field and rings the local called party.

After the calling and the called party have conversed, it is decided that a conference arrangement should be set up with other local parties. The called party flashes the operator and informs her that he wants a conference with the trunk call and several other local parties. The operator removes the "station" end plug of the trunk circuit from the station jack multiple and transfers it into the trunk jack of the conference group jacks in the jack field. Next, using another cord circuit, she plugs in the "trunk and station" end into the station jack multiple for one local party and extends the "station" end of the same cord circuit into the station jack of the conference group jacks of the jack field. This last operation is repeated for each local party to be included in the conference.

When the conference is completed, the supervisory lamps for each cord circuit will light, indicating that each cord circuit can be disconnected.

AUX-6. CODE CALL SERVICE

A station initiated Code Call service is a system in which individuals who are not directly accessible by telephone may be automatically paged or signaled by means of bells, buzzers, horns, whistles, or lights. The system provides a maximum of 10, one-digit codes or a maximum of 125, three-digit codes with intermediate signaling obtained by a combination of two and three digit codes.

Code Call equipment is operated by dialing the Code Call prefix number, thereby connecting a party's telephone to the Code Call equipment. If the equipment is busy, busy tone is returned; if idle, no tone is heard and the calling party continues by dialing the assigned code number(s) of the party he wishes to page. The paged party, after hearing (or seeing) his code, answers by dialing the assigned code answering number, whereupon the two parties are connected to a private station connection. If the called party cannot be reached, the calling party replaces the telephone handset, causing the Code Call equipment to restore. In some cases it is possible to preset the Code Call equipment for automatic idling once a code sounds a specified number of times.

The following circuits represent only those circuits most commonly used.

Circuit H-61682 can be accessed from switch-through or nonswitch-through type connectors, or it can be accessed from a selector level. One, two, or three digit codes may be used. In addition, a FIRE ALARM lead is provided which, when grounded, interrupts any code that may be sounding and transmits a noncoded signal to all Code Call areas. By special wiring, a transmission circuit can be provided so that those persons concerned with fire safety may converse with the fire marshall through the Code Call equipment. The equipment of this circuit is mounted on two jacked-in bases and is primarily designed to occupy two positions on the power shelf.

Circuit H-61100 is similar in operation to H-61682, but is primarily used where wall mounting is required.

Circuit H-75091 incorporates all of the features of H-61682 and, in addition, provides for conversational timing and a code limiting feature, whereby the number of times the code is sounded can be limited. It also gives access and priority to emergency calls.

Circuit H-61097 is a 125 code capacity machine designed for wall mounting. It incorporates the features of circuits H-61682 and H-61100, but may be used only with a 24 volt supply, such as is used in the type 32A31 or 33A6A attendant's cabinet.

With all of the above Code Call machines, provisions can be made for either multichannel or divisional Code Call. Multi-channel Code Call means that while one Code Call conversation is in progress, another Code Call can be originated and completed (circuit H-61914). In other words, as a Code Call is answered, the Code Call machine is released and made available for a second Code Call. Additional relay equipment is necessary to provide this feature.

Divisional Code Call means that one set of codes might be used for one area while another set of codes from the same machine will be used for a second area. Again, circuit H-61914 is used, but the strapping arrangements are varied.

AUX-7. PICKUP SERVICE

This type of service is especially suitable for parties who are frequently away from their telephones, but are within hearing distance of their telephone's ringer. The service enables a party (upon hearing his telephone ring) to go to the nearest telephone and dial the pickup number assigned to him, thus answering the call. For example, let us assume party "A" is assigned to connector terminal 81 for his standard party number. But party "A" is away from his telephone frequently, yet within hearing distance of his ringer; therefore, he is assigned connector terminal 82 as a pickup number. Pickup number 82 is not listed in the directory. However, when a call comes into party "A's" telephone and he is away but hears his telephone ring, he goes to the nearest telephone and dials an 82 to answer the call.



AUX-7. Pickup service.

The required equipment for pickup service is a suitable resistor, some strap wire and spare connector terminals. The number of stations that can have pickup service will depend upon the number of spare connector terminals available. A sketch, indicating the necessary wiring, is shown in AUX-7. If the switch is wired for conference calls, connect conference lead "C" to the pickup number "C" lead. In this arrangement, the outside resistor is not required.

Pickup service is optional on type 25, 50, 75, and 32A31 switchboards, and is used only with "Calling Party Release" connectors; therefore, it is not available for selector systems using "Last Party Release" connectors.

AUX-8. TOLL RESTRICTION SERVICE

When it is desirable to restrict toll calls with or without going through the operator, toll restriction service can be used. By means of special apparatus called a toll restriction adapter, which is located between an outgoing selector or switch-through connector and the central office trunk, toll restriction service can be made available. Into this adapter (circuit H-610070) are built certain features for distinguishing between special service, restricted or CLR and SATT (Strowger Automatic Toll Ticketing) codes. Also a discriminating feature is used to ascertain if the dialed ABC code is or is not correct.

When the calling station dials a toll number, the toll restriction adapter automatically tests the first three digits (ABC code) as to the correctness of each digit and finally the sequence in which they are dialed. If either a digit or the sequence is wrong, the adapter will block the outgoing call from the central office trunk and will return dial tone to the calling party through the first selector. If an attendant cabinet is used, it will refer the call to the attendant. If the dialed ABC code is correct, the adapter drops out of the switch train and the call is extended to the central office and finally to the called party.

Certain codes by virtue of their functions are always restricted. Such codes would involve special service, long distance operator and SATT access for Direct Distance Dialing (DDD). Whenever one of these codes is dialed, the toll restriction adapter will automatically block the call, unless it is so arranged that an access digit is dialed to permit specialized service, or that selected telephones are equipped for this specialized service.





When it is necessary to restrict stations from the toll operator and distant areas, such as those of the Direct Distant Dialing scheme, and yet permit dialing to less distant areas through the toll ticketing equipment, circuit H-75517 is used. This circuit expands the facilities for direct dialing above that of circuit H-610070; however, it still retains the restrictive features for use within a circumscribed area.

As an optional feature, circuit H-75517 can be provided with tone detection. The tone, which is present on lead C, identifies unrestricted parties dialing an outside code. It drops out the common equipment and allows an unrestricted party to switch-through to a central office after the end of the first dialed digit.

AUX-9. EXECUTIVE QUICK CALL SERVICE

The type 11 executive quick call system, as a telephone accessory, maintains direct line communication between an executive and up to 20 local telephones. The executive reaches a direct line station through the use of manual push buttons located on the quick call cabinet. Since direct line calling eliminates dialing, executive quick call service instantly connects the executive to those persons most frequently called. The system gives an executive control of direct line calls; that is, an executive may call any of 20 individual stations designated as "direct line." In addition, the executive may call the direct line station by normal station dialing; and he may also make regular public exchange calls if his telephone is connected for outgoing public exchange service. More than one executive quick call system can be installed in different locations and yet remain connected to the same direct line telephones.

This service can be used with either the standard model type 80 telephones (local party or metropolitan dial) or the recommended type 88T (transistorized) speakerphone. The type 88T speakerphone gives the executive the convenience of ''hands-free'' operation. Without taking the handset off the hook, the executive can hear the called party's voice through a loudspeaker next to the telephone. His own voice is picked up by a tiny microphone located in the base of the telephone. This service is available for 48 volt systems which include type 25, 50, and 75 switchboards.

To call a direct line station, the executive selects the party's name on the designation strip and then presses a cabinet button corresponding to that party's name. When the executive picks up his telephone handset or turns the calling key on the type 88T speakerphone, he automatically rings the called station. If the executive receives a busy signal, he may press another key which places a distinctive audible tone signal in the background of the called party's conversation. When the called party hears the tone, he is automatically connected to the executive by momentarily restoring his telephone's hookswitch button. If the executive does not wish to signal the busy station, he may "camp-on" the busy line. "Camping-on" the busy line allows the executive to tend to interim business, yet he is connected to the busy called station. When the called party voluntarily releases the call, he may be reached. The executive may also "cut-through" on the busy line by pressing still another button, thereby making a three-way conversation.

An additional feature is that outside public exchange calls may be "held" by the executive (through pressing the nonlocking "hold" button) while a direct line call is made. After the direct line station call is made, the executive may be reconnected to the public exchange party by again pressing and releasing the "hold" button.



AUX-9. Executive quick call service.



AUX-10. Public address cut in service (voice paging).

AUX-10. PUBLIC ADDRESS CUT IN SERVICE (VOICE PAGING)

The public address cut in unit permits a station to reach individuals who are not directly accessible by telephones. The unit connects the station to loud-speaking equipment, and enables the calling party to page individuals by means of vocal amplification. The paging party merely lifts his handset and dials the public address cut in number. A "splash" ring-back tone is returned to him, which indicates that the loud-speaking equipment is ready for use. The paging party then makes his statement into the handset.

Circuit H-61662, which is arranged for 24 or 48 volt operation, is specifically designed to enable the paged party to contact the calling party by either dialing the calling party's number (recommended), or an answer number. Both may be used.

AUX-11. EXECUTIVE RIGHT-OF-WAY SERVICE

The executive right-of-way service, as its name implies, is a specialized service. This service may function as a "dial in" type monitoring or as a "camp-on" busy service. The latter function is more expressly used on toll operation for public exchanges where the user "camps-on" a busy line and receives priority over any other incoming calls to the called party. In this case, a special connector holds or "camps on" the line until it is freed. When the line is freed, a special connector will automatically ring the called line. Most private automatic exchanges no longer use this service because the "dial in" feature is more acceptable.

In the "dial in" feature, the monitoring service may be of two types: silent cut in, or warning tone cut in. In either case, circuit H-58864 is used. The silent cut in monitoring has special application in such institutions as penitentiaries, schools, and mental hospitals. The warning tone cut in finds its widest application in business places.

If, in a business telephone system, the executive's telephone is a multi-line type, one line may be equipped with executive right-of-way service. The executive, desiring to reach a certain party would normally call him on the regular line. If the executive receives a busy signal, he proceeds to use his executive right-of-way line. This special service will cut in on the called party's conversation and place a low level audible tone on the line for both conversing parties to hear. The audible tone automatically informs the conversing parties that an executive has cut in on their conversation and desires to talk to one of them.

The executive right-of-way service is available on type 32A31, 25, 50, and 75 switchboards.



AUX-12. Paging telephone service.

AUX-12. PAGING TELEPHONE SERVICE

The paging telephone is designed to provide special loud-speaking service with manual or automatic 24 or 48 volt, d-c switchboards. The paging telephone enables a party to ''page'' and converse with one or more persons located in the area having this service.

When the calling party dials the paging telephone number, he is connected to the paging telephone equipment. As he speaks, his voice is amplified and reproduced through one or possibly two loud-speakers in the area. The paged party answers by facing the microphone and speaking in a normal voice. The amplifier will transmit his reply to the calling party. Under normal semi-quiet conditions, the paged person's voice will be picked up by the microphone from any distance up to fifty (50) feet. For satisfactory results, the locale noise-energy level must be far below the voice-energy level of the person who speaks into the microphone.

The paging telephone consists of a relay circuit which interconnects its connector terminals to a two-way electronic amplifier. This amplifier is equipped with one or two permanent magnet loud-speakers and one or two dynamic microphones. Volume control rheostats govern both the microphones and the loud-speakers. The power supply for the amplifier unit may be obtained from any commercial 115 volt a-c, 50-60 cycle source.

AUX-13. DIRECT LINE SERVICE

Direct line service, as its name implies, is a specialized service between two different stations. It finds particular application where two different stations are frequently in contact with each other. In this arrangement, the regular switchboard equipment is by-passed through the use of direct line relays, but the power and the interrupted ringing current are supplied by the regular switchboard equipment.

Normally, standard telephones without dials are used; direct line service telephones access each other only. However, a multi-line telephone may also be used with one line reserved for direct line service.

When a calling party lifts his handset, the other associated direct line telephone rings automatically. For every two telephones on direct line service, a set of direct line relays is required.

Direct line equipment is arranged for either 24 (circuit H-41196) or 48 (circuit H-61929 or H-73420) volt operation and may be either jacked-in or relay rack mounted. Also, each equipment is arranged for one or two circuits per unit.



AUX-13. Direct line service.



AUX-14. Secretarial answering service.

AUX-14. SECRETARIAL ANSWERING SERVICE

The secretarial answering service is a compact unit, providing a centralized answering service. This unit allows one secretary to answer incoming telephone calls for a group of executives without leaving her desk.

The unit is housed in an all metal cabinet of modern design, styled in a two-tone gray. It is fully equipped with indicator lamps, three position lever keys and name designation strip holder(s). Combining compactness with durability, this unit provides a light weight, yet efficient answering system, and may be placed conveniently upon the secretary's desk.

The secretarial answering service unit is designed to give individual executive privacy. It is impossible for the executive lines to be inadvertently tied together, because only one line is connected to the secretary's telephone at one time. However, several calls may be held simultaneously, but not interconnected.

Depending on the number of executives to be grouped together in one secretarial answering unit, the answering units are available in three sizes: a six (6) line maximum, a ten (10) line maximum, and a twenty (20) line maximum.

With each unit the customer has the choice of using either a straight line terminal box or an audible signaling unit equipped with a terminal box. The audible signaling unit is supplied when several advantages over the straight line terminal box are desired: the secretary is frequently away from her desk and needs an audible signaling device, or she is so situated that she cannot hear the individual executive's telephone ring.

Except for the manual operation of the lever key by the secretary, the unit functions automatically. Each signal lamp is connected across an executive line and will flash with each ringing pulse. The audible signal unit, if used, will ring with each ringing pulse. Each lever key is easily operated, and it enables the secretary-operator to answer, hold, or release the proper incoming call.

AUX-15. DICTATION SERVICE

Automatic dictation service through the use of the telephone is available with type 25, 50, or 75 switchboards. Using either selector or switch-through connector access, the dictation machine is connected directly to the calling party's telephone.

When the calling party desires dictation service, he lifts his handset and dials a prescribed single digitaccess number. Through the use of circuit H-75496, which connects the calling party to an associated dictation machine, an audible tone is transmitted to the calling party. This audible tone is distinct from the regular telephone dial tone and serves as a 'go ahead' signal for the calling party.

To start the dictation operation, there are several available options. Any one of the following three options may be used, depending upon personal preference: (1) a push button in the telephone handset, (2) dialing of a prescribed single digit, such as a "1", or (3) a voice-operated relay. When dictation service is used, the local switchboard must be equipped with adequate switches to handle this additional traffic.



AUX-15. Dictation service.

As an example, let us assume that option (1) above is selected for the dictation operation. When a party wishes to dictate, he removes his handset and dials a single digit access number. The access number connects his telephone through to the dictation machine, automatically busies out the dictation machine to all other calls, and returns a tone signal. This tone signal indicates that the dictation machine is ready. To start dictation, the calling party merely presses the button in his handset and begins talking. The dictating machine continues to transcribe the message as long as the button in the handset is pressed. If it is necessary to make a correction, the handset button is released and a single digit #2 is dialed; this digit causes a correcting mark to be made on the machine. When "playback" is desired, a single digit #3 is dialed. The "playback" is stopped automatically at the end of the transcription. To proceed with futher transcription, the handset button is again operated.

At the end of the dictating sequence, a single digit #4 should be dialed to mark the machine, indicating that the message is completed. If for any reason the dictation machine operator needs to be contacted, the calling party dials a single digit #0. This digit rings her telephone. Finally, when the calling party returns his handset to its cradle, the dictation recording trunk circuit is released; the dictation machine is stopped and is freed for future use.

Circuit H-75496 is designed to operate with dictation machines produced by major manufacturers. The dictation machine itself is provided by the customer.

AUX-16. NIGHT ANSWER AND TRANSFER SERVICE

In normal daytime operation, the attendant cabinet is operated by an attendant. But in the evening when the attendant leaves, one or two cord(s) are plugged into the jacks (or the lever keys operated in an automatic board) and the rest of the central office trunks are busied out either at the cabinet or at the central office.



AUX-16. Night answer and transfer service.

The plugged-in cords (or operated keys) connect central office trunks with the night answer jacks or circuit. Thus, during the night hours, whenever a trunk call comes in, the night answer and transfer equipment is seized by means of the operated trunk circuits. This seizure is automatic and causes the night bell to ring or activate the Code Call system.

When the night watchman hears the night bell or the Code Call sound, he is instructed to dial a predetermined night answer number. This number connects him with the incoming trunk call. When it is learned that the calling party would like to speak to a certain person, the night watchman uses another station telephone to contact the desired party.

When the called party answers, the night watchman informs him that there is an outside call. The called party then hangs up and dials the transfer number which will connect him to the outside call through the night answer and transfer equipment. The night watchman can now retire from the call.

If the normal night answer and transfer traffic is light, circuit H-61875 may be used with one, two, or three trunks. Each trunk would have a different sounding bell or audible system, and different answer and transfer numbers. If, however, the night answer and transfer traffic is heavy, circuit H-75518 is recommended, because a common signal may be used along with the necessary trunk interlock and split-off feature. The interlock feature prohibits cross talk and interconnection of two different trunks. The split-off feature allows only two parties to converse at one time. The third party is held until one of the two conversing parties retires from the call.

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