IMPLEMENTATION OF DATA SERVICES
INTERDEPARTMENTAL COORDINATION

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1. GENERAL

1.01 This section describes the coordination of activities among departments to implement data service and to make optimum use of data set stocks. The intention is to aid the operating companies in reducing the level of class C and field stocks and to improve the use of data set stocks to aid in meeting service dates. Included in this section are suggestions for information flow on new data services from the time the service is sold until the equipment is installed. Also included is the use of uniform service order codes (USOCs), which uniquely describe the service desired. Descriptive material and service order information can be found in more detail in the 590-000-102 reference guide series of Bell System Practices (BSPs).

1.02 This section is reissued to include additional information for implementation of data services and to revise the Universal Suffix Table. Since this reissue constitutes a general revision, arrows ordinarily used to indicate changes have been omitted.

2. UNIFORM SERVICE ORDER CODES

2.01 Sales personnel must determine the service offering needed by asking the prospective customer about desired service, including options. The available service offerings and customer options are found by referring to the appropriate reference guide. The part of the USOC which describes the service offering is identified in the reference guide. To obtain the complete USOC, which includes a suffix to specify customer options, the Universal Suffix Table (Table A) must be used. The USOC is then used in preparation of the service order. Table A is also used by Plant and Engineering personnel for decoding the USOC designations.

2.02 Uniform service order codes are used to denote all types of service offerings. The USOC consists basically of a 3-character service code, such as "DGS". This basic service code describes a service. Customer options are expressed by adding suffixes to the basic service code. By using the customer option table in the appropriate reference guide and the Universal Suffix Table (Table A), the correct suffix for particular customer options can be selected. Thus, a 5-element USOC, such as "DGS29", will describe (for the purposes of the service order and apparatus selection) a particular service offering and the desired customer options. In cases where no choice of customer options exists, the suffix "00" is used. In other cases where only a few customer options are available, suffixes are listed directly in the applicable reference guide.

Use of the Universal Suffix Table to Encode and Decode the USOC Suffix

2.03 ***To Encode:***

(1) As the choice is made for each customer option, make a note of the option number, eg,

(a) A-2
B-3

(b) A-1
B-3

TABLE A
UNIVERSAL SUFFIX TABLE
(CODES 01 THROUGH 64)

SUFFIXES 01 THROUGH 32

USOC SUFFIX	A	B	C	D	E	F
01	1	3	5	7	9	11
02	2	3	5	7	9	11
03	1	4	5	7	9	11
04	2	4	5	7	9	11
05	1	3	6	7	9	11
06	2	3	6	7	9	11
07	1	4	6	7	9	11
08	2	4	6	7	9	11
09	1	3	5	8	9	11
10	2	3	5	8	9	11
11	1	4	5	8	9	11
12	2	4	5	8	9	11
13	1	3	6	8	9	11
14	2	3	6	8	9	11
15	1	4	6	8	9	11
16	2	4	6	8	9	11
17	1	3	5	7	10	11
18	2	3	5	7	10	11
19	1	4	5	7	10	11
20	2	4	5	7	10	11
21	1	3	6	7	10	11
22	2	3	6	7	10	11
23	1	4	6	7	10	11
24	2	4	6	7	10	11
25	1	3	5	8	10	11
26	2	3	5	8	10	11
27	1	4	5	8	10	11
28	2	4	5	8	10	11
29	1	3	6	8	10	11
30	2	3	6	8	10	11
31	1	4	6	8	10	11
32	2	4	6	8	10	11

SUFFIXES 33 THROUGH 64

USOC SUFFIX	A	B	C	D	E	F
33	1	3	5	7	9	12
34	2	3	5	7	9	12
35	1	4	5	7	9	12
36	2	4	5	7	9	12
37	1	3	6	7	9	12
38	2	3	6	7	9	12
39	1	4	6	7	9	12
40	2	4	6	7	9	12
41	1	3	5	8	9	12
42	2	3	5	8	9	12
43	1	4	5	8	9	12
44	2	4	5	8	9	12
45	1	3	6	8	9	12
46	2	3	6	8	9	12
47	1	4	6	8	9	12
48	2	4	6	8	9	12
49	1	3	5	7	10	12
50	2	3	5	7	10	12
51	1	4	5	7	10	12
52	2	4	5	7	10	12
53	1	3	6	7	10	12
54	2	3	6	7	10	12
55	1	4	6	7	10	12
56	2	4	6	7	10	12
57	1	3	5	8	10	12
58	2	3	5	8	10	12
59	1	4	5	8	10	12
60	2	4	5	8	10	12
61	1	3	6	8	10	12
62	2	3	6	8	10	12
63	1	4	6	8	10	12
64	2	4	6	8	10	12

C-6 C-5

D-7

E-9

F-12

(2) At the top of the Universal Suffix Table (Table A), find the letter of the ***last*** option chosen, eg, in (1)(a) the last option letter chosen was F, and in (1)(b) it was C.

(3) Going ***down*** the column selected in (2), find the first appearance of the option number desired. Move one column to the left and ***move downward*** to find the first appearance of the option number of the next letter (a reverse alphabetical order). ***Never move upward in the Universal Suffix Table while encoding customer options.*** Each succeeding numeral should lie on the same line or a lower line than the previous numeral. This process is continued to column A. The USOC suffix that applies to the customer options desired is found in the number column immediately to the left of the A option number, eg, in (1)(a) the USOC suffix is 38; in (1)(b), it is 01.

2.04 ***To Decode:***

(1) Find the USOC suffix number in the Universal Suffix Table and make a note of all the option numbers listed to its right, eg, for suffix 13 shows

A-1

B-3

C-6

D-8

E-9

F-11

(2) From the reference guide, find the number of decisions associated with the basic 3-character USOC on the order. Note the options applicable beside the entries made in (1), eg, for USOC "DAZ13" show

A-1: 2-wire operation

B-3: Call terminated by ACU

C-6: ACR timer not stopped

D-8: No EON from customer terminal

E-9: Not applicable

F-11: Not applicable

(3) In some cases the option chosen for one decision determines whether or not the following decision(s) applies. The following examples using "DLB08" and "DLB16" illustrate these cases.

"08"	"16"
A-2	A-2
B-4	B-4
C-6	C-6
D-7	D-8
E-9	E-9
F-11	F-11

In the case of "DLB08" only, decisions A, B, C, and D apply because the option chosen for decision D was 7 and the instructions in the reference guide state "no E decision is to be made." In the case of "DLB16", decisions A, B, C, D, and E apply because the option chosen for decision D was 8 and the instructions in the reference guide state "continue to E decision". In neither case does the F decision apply.

2.05 ***Typical Example for Encoding a Specific Service Offering:***

(1) The customer has expressed a desire for a data service for the transmission of ***facsimile*** signals.

(2) Marketing must refer to Section 590-000-102 for the appropriate table listing the type of service desired. In this case Table I applies, which refers marketing to Section 590-006-101 for further information.

(3) Table A in Section 590-006-101 lists the basic USOC and the current standard model data set. The customer, for example, desires rotary dialing without reverse channel. This establishes the basic USOC as "DEA" with data set 602C5 as the current standard model.

(4) Table B in Section 590-006-101 lists the decisions to be made by the customer which determine the USOC suffix. The customer, in this example, desires automatic answering—decision A-1; without automatic calling unit—decision B-4; with sync channel—decision C-5. Since this is a facsimile service, pre-emphasis and post-emphasis options should be specified. Therefore, decisions D-7 and E-9 will apply. The result is A-1, B-4, C-5, D-7, and E-9.

(5) Using the Universal Suffix Table, it is determined that the suffix is "03". This, together with the basic USOC designation "DEA", produces the complete USOC "DEA03".

2.06 ***Typical Example for Decoding a Specific Service Offering:***

(1) The USOC in this example is "DEA03".

(2) In Section 590-000-102, Table A contains an alphabetical list of basic USOC. "DEA" shows that data set 602C and Section 590-006-101 (reference guide) apply in this case.

(3) In Section 590-006-101, Table A establishes the basic USOC "DEA" as data set 602C5 equipped with rotary dial and no reverse channel capabilities.

(4) Suffix "03" in the Universal Suffix Table indicates the letter options as A-1, B-4, C-5, D-7, E-9, and F-11.

(5) Table B in Section 590-006-101 defines:

A-1: With automatic answering

B-4: Without automatic calling unit

C-5: With sync channel

D-7: With pre-emphasis

E-9: With post-emphasis

F-11: Since no F decision is listed, F-11 is disregarded.

(6) Table A in Section 590-006-101 states that possible substitutes for USOC "DEA" are data sets 602A, 602A1, 602C1, 602C2, or 602C6. As the sync channel (pre-emphasis and post-emphasis are desired IN), any of the five sets can theoretically be used. For example, if a 602A1 is available in C stock, the person performing the decoding can specify its use.

(7) Letter options Y, M, and ZC are assigned for customer options. As pre- and post-emphasis are wired permanently IN for the 602A1, no equivalent lettered option need be specified for these choices.

(8) The required telephone company (Telco) options are then selected and converted into lettered form and combined with customer options previously selected for inclusion on a circuit layout record card (CLRC) or equivalent.

2.07 In some cases there will be a need to convey information which is not specifically defined by the USOC and its suffix. For example, a number of service arrangements are possible for data set 202D, eg, 2-wire private line (PL) with data auxiliary set (DAS) 804A, or 2-wire PL with DAS 804A also arranged for alternate switched network line backup. In some operating companies there may be no distinction made in the tariff offering or USOC for these variations, but information describing the arrangement is need for engineering, ordering, and installation purposes. This information should be included in the Remarks section of the system service order (SSO) by the Sales organization.

2.08 Even though a data set code may be specified or indicated on a service order, the organization responsible for assigning data sets is free to select a suitable substitute data set from those available in Telco stocks. Service orders that fail to provide a fully coded USOC designation should be returned to the originating organization for completion.

3. REFERENCE GUIDES

3.01 Each reference guide contains the description of data terminal equipment or auxiliary data equipment which is presently available. The reference guide includes a photograph of the

equipment; a general description; physical, electrical, and interface characteristics; customer and Telco options; substitution, conversion, and disposition information; preferred codes for maintenance spares; reference to pertinent documents, and other ordering and utilization information.

3.02 Reference guides are intended for use by all Telco departments. The material will assist Marketing or Sales personnel in specifying service features for each service offering. Through the use of the reference guides, the ***type*** of data set will be identified to satisfy a particular offering. Engineering and Plant personnel can then use reference guides to determine the appropriate data sets and options to implement a service. Reference guides are periodically updated by the issuance of replacing or additional sections to reflect new or improved data services and/or equipment.

4. SERVICE ORDER INFORMATION FLOW

4.01 To meet customer requirements for new data services, it is necessary that an orderly flow of information be established.

4.02 When the data service is being sold, the Sales person with the customer and/or business machine representative, must determine the service offering and customer options needed. The service offering, including tariff features (rotary dial versus TOUCH-TONE®, reverse channel or no reverse channel, etc), and its basic 3-character USOC are determined from the reference guide. Then, customer options are determined (listed alphabetically as either/or decisions). Using this information and the Universal Suffix Table, the 2-character suffix is determined. In cases of no customer options ("00") or when a minimum is available, the proper 2-character suffix is indicated in the reference guide. At this time the SSO is written including the 5-character USOC as an abbreviated method to convey service requirement information. Additional information on service arrangements should be described in the Remarks section of the SSO.

4.03 For intercompany services the SSO is handled according to the Intercompany Services Coordination (ISC) Plan. Considerable advantages result if the procedures of ISC are followed for ***intracompany*** services as well. A description of the ISC plan and related information is included in a series of sections numbered 010-520-100 through 010-520-149. An index of these practices is included in Section 010-520-100.

4.04 Within each associated company, a procedure should be established to ensure the systematic handling of service orders. A flowchart indicating the basic information flow which takes place in processing an order for data service is shown in Fig. 1. This flowchart is not necessarily complete, but is intended to emphasize the steps needed to convey the information required to design, order, and install the service.

4.05 At all points where the SSO is used, the basic code indicates the type of data set needed. The suffix is decoded to determine the customer options desired. Engineering or Plant personnel must determine whether this service can be met with a data set from existing stock, or whether a new set must be requisitioned. The Telco options which are required to implement the service must then be determined. All options can then be listed according to letter designations for use on any order or instructions to local installation forces.

5. OPTIMUM UTILIZATION OF DATA SET STOCKS

5.01 Information is included in the reference guides on previous data set models that provide the same service as newer models. This information will aid in the reduction of data set stocks. In many cases, older model sets are reusable if certain conditions are observed. These conditions are given in the reference guides. In some cases, data sets require updating which should be considered if the cost is reasonable. When service dates are critical, costlier data sets having more than the required capabilities may be used temporarily. Adequate means should be devised to enable quick determination of the availability of a specific data set in class C stock. With this capability the employee or department responsible for determination of possible substitutions can better use existing stocks of data sets.

5.02 Reference guide information should be used as a guideline in determining which data sets in class C or field stocks should be retained and which should be disposed of. Many of the earlier model data sets can be updated at reasonable cost to make them suitable for reuse. Due to the variation in repair charges, storage expense, and other economic factors, sound judgement by

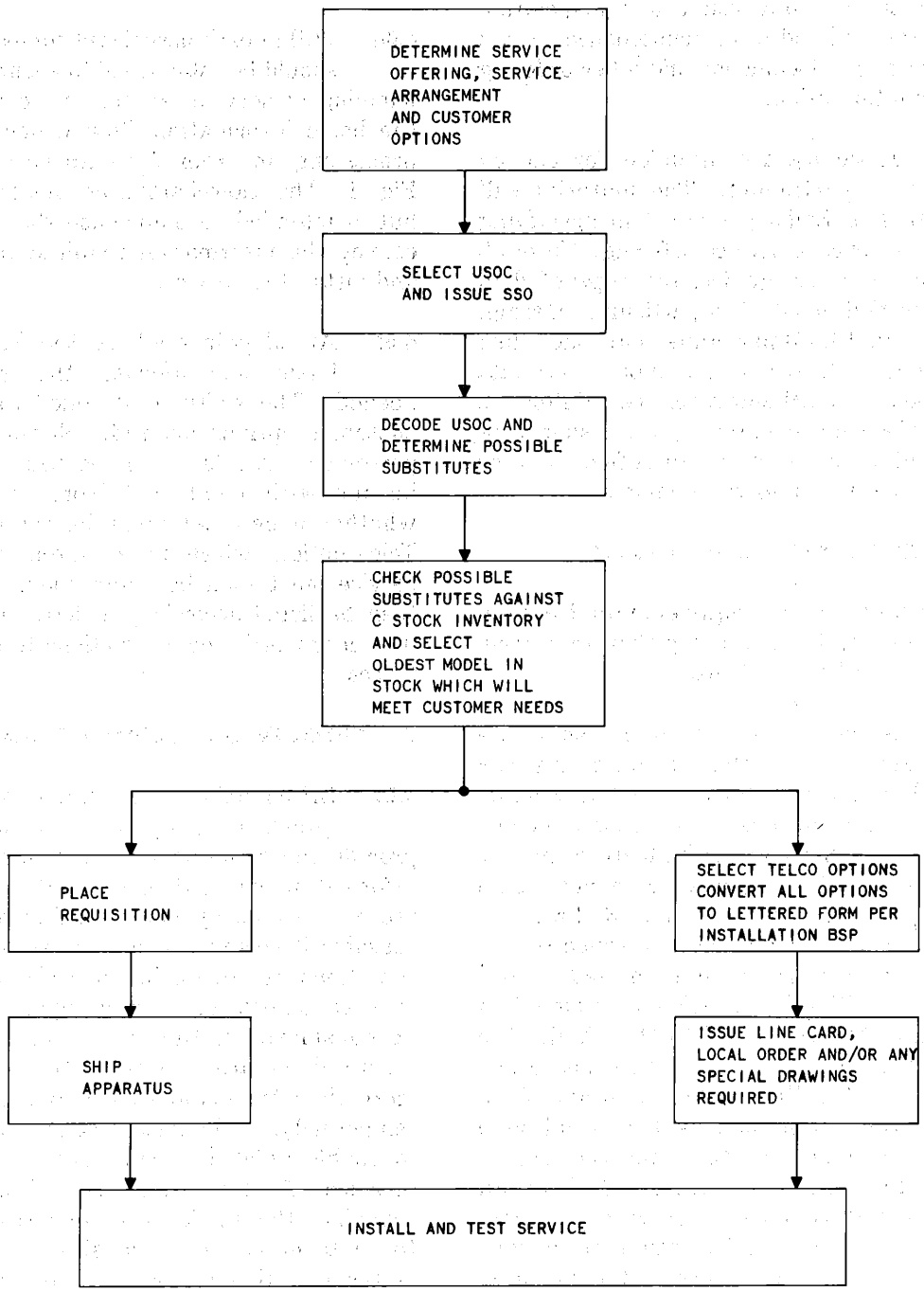

Fig. 1—Flowchart for Processing Order for Data Service

knowledgeable personnel is required to determine whether expenses of updating are justifiable.

5.03 Field stocks of data sets for maintenance and installation purposes should be centralized. The number and type of sets maintained in these stocks are dependent upon quantities of the various types of data sets in service within the territory concerned and the frequency of trouble expected. Fewer maintenance spares are needed if the spares are equipped with all available options for a certain type of data set (eg, a 202C6 can be considered as a backup spare for 202A, 202C1, 202C2, 202C3, or 202C4). Where possible, maintenance spare guidelines will be included in the reference guide. The time required to deliver a set to the point of need must, of course, be a prime consideration in deciding the location of the centralized stocks.

5.04 Centralization of the data set ordering function is suggested to realize greater benefits from the substitution capabilities afforded by the reference guides (see 5.01). An operating area having only one central ordering point can make more complete use of class C and field stocks before buying new data sets.

5.05 In the past, improper requisitioning has compounded the data set availability problem. Requisitions stating premature delivery dates and/or overstated quantities have placed an unnecessary burden on the data set supply line. It is essential that the following guides be observed when placing requisitions for data equipment.

- Place requisitions to Western Electric as far in advance as possible. Include a statement that the units should not be shipped prior to the specified shipping date.
- Specify authentic shipping dates according to normal supplies procedures.
- Specify genuine quantities.

6. DEPARTMENTAL RESPONSIBILITIES

6.01 As mentioned in 4.03, the intercompany handling of the SSO for data services will generally conform to ISC procedures. However, additional guidance on departmental responsibilities is included here.

6.02 It is recognized that the various operating companies differ in the manner in which orders for data services are handled. In many companies, existing procedures and organizations may be adequate to fully implement the data set utilization concepts. In others, changes in procedures and organization may be needed to achieve meaningful results. Except in extreme cases, these changes should be minor compared to the benefits and savings realized.

6.03 To realize the full benefits of data set utilization, several prerequisite conditions must exist. Where they do not exist, positive action should be taken toward accomplishing these prerequisites prior to implementation:

(a) Sales personnel handling data orders must be knowledgeable and well trained in data services.

(b) Personnel handling the decoding of orders and effecting of substitutions must be knowledgeable and well trained in the technicalities of data services and apparatus.

(c) A reliable and routine means of disseminating design, apparatus, and option information for installation purposes must exist.

(d) Centralized ordering of data apparatus is desirable, possibly on an area basis.

(e) The custodian of class C stocks must have an accurate and up-to-date record system on the availability of specific data sets.

(f) The information flow for data services must be well defined, and adequate plans for local procedures and organization made well in advance of implementation.

6.04 The final decision as to the assignment of departmental responsibilities for the various tasks involved rests with the individual associated company. These decisions must be reached based on the traditional division of responsibility within the company, availability of qualified personnel, and other management considerations. However, where sufficient flexibility exists, and guidelines are desired, the various tasks may be assigned as outlined in the following paragraphs.

(1) Sales/Marketing/Commercial

(a) Determine service offering

(b) Determine customer options

(c) Determine service arrangement

(d) Select USOC and suffix

(e) Issue SSO and/or local service order.

(2) Engineering

(a) Decode USOC and suffix

(b) Determine possible substitutes

(c) Select specific data set from class C stock if available

(d) Furnish ordering information and any special drawings or instructions to plant

(e) Determine the Telco options

(f) Prepare and issue CLR (or similar document) complete with information as to the type of data set to be used, and listing of the lettered options required.

(3) Plant

(a) Place requisition and perform any follow-up required

(b) Establish and maintain station records

(c) Administer class C stock and set up required procedures for determining availability of specific data sets

(d) Establish and maintain optimum field maintenance stocks

(e) Install, test, and maintain service.

(4) Western Electric Distributing House

(a) Maintain optimum class C stock

(b) Establish adequate record system to enable quick determination of availability of specific data sets

(c) Ensure that data sets returned for repair receive rapid turnaround so that investment in the "unrepaired" category can be reduced.

7. BENEFICIAL RESULTS

7.01 The following benefits should be realized from use of the data set utilization concepts described in this section.

(a) Service dates will be met more readily and more often with "roadblocks" removed.

(b) Optimum utilization of stocks will be accomplished since data sets are to be reused in a logical and orderly manner. Reducing the investment in class C stocks will result in definite improvement in the revenue/expense ratio.

(c) Sales personnel will know what information must be obtained from the customer in order to make decisions concerning all data service offerings.

(d) All necessary information is conveyed on the initial SSO, therefore the requirements to obtain additional information should be minimized.

(e) The common language can be readily understood by all personnel.

(f) Common reference material and lists are to be used by all companies and all departments.

(g) Continuing reuse of serviceable data sets will reduce the manufacturing and repair loads and will stabilize demands.

(h) With all needed service details available, less time will be required of all personnel groups involved in coordinating and implementing new services.

(i) Supply personnel will be able to reduce stock levels and control "keeplists."

(j) Flexibility will be possible in stocking maintenance spares, because equivalent codes will be available for substitution.

(k) Records will be more accurate and complete for detailed reporting purposes.

(l) With more detailed records, forecasting the need for future data services will be more realistic and complete.

(m) Information will be available for special studies and reports.

8. BSP LAYER ALLOCATION—REFERENCE GUIDES

8.01 The reference guides are arranged in the 590 layer in the following manner:

SECTION	TITLE
590-000-100	Implementation of Data Services—Interdepartmental Coordination
590-000-101	Description of Data Set Features and Options
590-000-102	Reference Guides—Cross Reference Information
590-001-10X	100-Series Data Sets—Reference Guides
590-002-10X	200-Series Data Sets—Reference Guides
590-004-10X	400-Series Data Sets—Reference Guides
590-006-10X	600-Series Data Sets—Reference Guides
590-008-10X	800-Series Data Auxiliary Sets—Reference Guides.