

Position Classification Standard for Technical Information Services Series, GS-1412

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SERIES DEFINITION

This series includes positions that involve supervision or performance of work in developing, coordinating, processing, and transmitting specialized information. The work requires (a) a broad knowledge of one or more scientific, engineering, technical, or other disciplines or fields of interest sufficient to understand the significance and relationships of the concepts and ideas contained in the information, and (b) a practical knowledge of one or more techniques for organizing, accessing, or disseminating information. Common functions in the occupation are indexing; developing and maintaining thesauri; preparing bibliographies, digests, and reports; searching subject-oriented literature and databases, and cataloging highly specialized materials. Some positions also require proficiency in one or more foreign languages.

This standard cancels and supersedes the standard for the Technical Information Services Series, GS-1412, issued in February 1966, and the grading criteria for positions in this series found in the Guide for the Classification of Positions Providing Professional-Level Library and Information Services, also issued in February 1966.

EXCLUSIONS

1. Classify positions in the [Librarian Series, GS-1410](#), when the work performed requires a full professional knowledge of the theories, objectives, principles, and techniques of librarianship.
2. Classify positions in the series appropriate for the discipline involved that require, as the most important qualification, the use of professional knowledge in a science, engineering, mathematics, or other scholarly field.
3. Classify positions in the [Information Technology Management Series, GS-2210](#), when they primarily involve knowledge related to designing, modifying, and maintaining systems for processing information or solving problems by the use of digital computers.
4. Classify positions involving training in the [Training Instruction Series, GS-1712](#), when the work primarily requires a practical knowledge of the methods and techniques of instruction and practical knowledge of the subject-matter being taught.
5. Classify positions in the [Contracting Series, GS-1102](#), when the primary requirement is professional knowledge of procurement procedures and contract evaluation, administration and termination. Classify positions in the [Purchasing Series, GS-1105](#), when the primary qualification requirement is knowledge of purchasing, rental, or leasing procedures relating to supplies, services, and equipment.
6. Classify positions in the [Archivist Series, GS-1420](#), when the primary requirement is professional knowledge of archival principles and techniques. Archives are those documents

officially produced by an agency, an organization, or an individual that, taken in the aggregate, serve to record the operations or activities of that institution or individual.

7. Classify positions in the [Language Specialist Series, GS-1040](#), when the work is primarily for the purpose of accurate translations and/or interpretations from a foreign language into English or from English into a foreign language.
8. Classify positions in the [Miscellaneous Administration and Program Series, GS-0301](#), when they involve nonprofessional, two-grade interval information work that does not require subject-matter knowledge of the concepts and ideas in the information.
9. Classify positions in the [Library Technician Series, GS-1411](#), that involve primarily a practical knowledge of library functions and services and the ability to apply standard library methods and procedures in order to perform technical and nonprofessional work in support of professional library work.
10. Classify positions in the [Miscellaneous Clerk and Assistant Series, GS-0303](#), that involve clerical or assistant work for which no other series is appropriate.

OCCUPATIONAL INFORMATION

Technical information services work is typically found both in specialized information centers and in libraries. While technical information work is associated primarily with specialized information centers, many libraries employ technical information specialists in a variety of organizational configurations. Some libraries have specialized organizational units composed mostly or entirely of technical information specialists and support personnel. Other libraries have them working alongside librarians, and/or professionals in specific disciplines such as medicine, chemistry, or economics.

Technical information specialists acquire, organize, access, and disseminate information across a wide spectrum of subjects and fields, usually of a highly specialized nature. This is to enable scientists, engineers, scholars, managers, legislators, and congressional staffs to pursue research and program oversight by providing access to pertinent information. This work may be similar to work that librarians perform, and may serve similar purposes. What distinguishes technical information work from that of a professional librarian is the particular combination of knowledges and skills required. First, technical information work requires a practical knowledge of one or more functions in information processing, which may or may not be similar to typical library functions. This knowledge is usually acquired on the job or through training courses. The work does not require a full professional knowledge of librarianship. Second, it requires considerable subject-matter knowledge, either in a recognized discipline (e.g., biochemistry or mathematics) or in a broader subject field (e.g., education policy, weapon systems, or information technologies). Some positions may also require proficiency in one or more foreign languages (e.g., Japanese or Slavic languages). Many librarian positions also require significant subject-matter knowledges. However, where professional library knowledge is the primary requirement, whether or not significant subject-matter knowledge is also required, the position

should be classified in the Librarian Series, GS-1410. In general, technical information work is distinguished from other types of positions that may be found in a library or information center by the dual requirement for subject-matter knowledge and practical knowledge of information processes.

Some libraries and information centers include positions classified in specific subject-matter series. While work in subject-matter disciplines may be carried out in an information setting, the principal requirement is full professional knowledge of the specific discipline, including the state of the art. In addition, the career relationships of such positions are typically found within the specific discipline (e.g., chemistry, physics) rather than in an information-related occupation, such as technical information specialist. Other types of positions that may be found in information organizations require a practical knowledge of information processes, but subject-matter knowledge is not required. (The Exclusions section of this standard provides guidance on classification of such positions.)

FUNCTIONS - Work in this series includes such traditional technical information specialties as indexing, vocabulary control, and preparing digests. In addition, this series includes some functions also performed by librarians, such as reference work, specialized cataloging, preparation of current awareness and other bibliographies, and management of automated files containing specialized text and data. A growing segment of the work concerns information technology itself. This includes participation in the development of information products (e.g., optical disks, databases), identification and evaluation of new information sources and tools (e.g., databases, software packages, networks), and developing new methods of organizing and disseminating information, such as developing gateways to specialized databases.

Indexing is a process of analyzing an item and assigning descriptive terms which facilitates retrieval of that item. This is similar to subject cataloging. However, where cataloging is practiced on monographs and journal titles as a whole, indexing is typically performed on individual articles in technical, scientific, or scholarly journals, technical reports of completed research and development projects; reports of research in progress; and new and revised legislation. Indexers use controlled vocabularies which have been developed to provide an overview of a specific area of knowledge as a source for their terms.

Indexers will generally use as many terms as necessary to describe all aspects of the item at hand. By contrast, subject catalogers generally assign a limited number of headings that, while as specific as possible, are intended to describe the item as a whole. The need of indexers to thoroughly understand all aspects of the subject matter is why indexers are hired for their in depth knowledge.

Some technical information specialists are charged with developing and maintaining the controlled vocabularies used by indexers. Indexing terms (sometimes called descriptors, or posting terms) are organized into structured collections, often called thesauri. Some examples of specialized thesauri are the Congressional Research Service's Subject Indexing Terms and Legislative Indexing Vocabulary, the Defense Technical Information Center Thesaurus, and the National Library of Medicine's Medical Subject Headings. One requirement of a thesaurus is arrangement in a known order in which hierarchical, associative, and other linguistic

relationships among terms are clearly displayed and identified. Individual indexers typically recommend additions, deletions, and modifications to thesauri based on current usage or new or changing concepts as reflected in the literature. However, one or more technical information specialists, sometimes in conjunction with subject-matter experts, are usually assigned overall responsibility for thesaurus content. They make decisions regarding content and presentation, and develop the complex links between terms upon which the thesaurus is based.

Formerly, many technical information specialists performed abstracting, that is preparing brief summaries of articles, reports, etc. This function has become less common, since abstracts currently are most often supplied by the author or the publisher. One specialized, and important, type of summarization continues to be performed by technical information specialists. The Library of Congress is required by statute to produce digests of all bills introduced in Congress. Digests are normally longer than abstracts, the basic requirement being to describe accurately and objectively the key provisions of new and amended legislation. The specialist also usually prepares a much briefer abstract (less than 100 words). Digests and abstracts are used by Members of Congress and their staffs in answering constituent inquiries, and by Library of Congress researchers in preparing reports on issues. Specialists in this area use knowledge of the legislative process and of broad subject areas, for example, environmental law and regulation.

Some technical information specialists perform functions that librarians also perform, such as reference, cataloging, and current awareness program and other bibliographical work. Reference, bibliographical, and cataloging assignments performed by technical information specialists tend to be more narrowly and intensively focused on specific subject areas than is typically the case for librarian assignments. Assignments usually require knowledge of highly specialized types and sources of information (e.g., technical and research progress reports, medical and scientific texts in a foreign language, patent applications, military standards, legislative histories), but do not require broader knowledge of the variety of information sources or cataloging formats typically required by librarian assignments. The work of the technical information specialist does not require in depth knowledge of other library/information functions outside the specialist's own area of expertise.

IMPACT OF CHANGING TECHNOLOGY - The technological environment is changing rapidly for technical information specialists. This is a result of the explosion in the quantity and the complexity of specialized information, and of rapid advances in computing and communications capabilities. The technical information specialist is confronted by ever-larger quantities of information that can be accessed, analyzed, and disseminated more and more rapidly through more powerful computing systems, high-speed telecommunications networks, and gateway information systems. The results of research are now submitted in a wide variety of formats including diskettes, videotape, and magnetic tape containing streams of numeric data from satellites and from computer systems. The documentation can be in text, graphic, numeric, audio, video format, or any combination thereof. Software programs are themselves the result of research, and their creators submit them to information centers in various electronic forms such as disks and over high-speed lines. Storage media include various electronic and optical systems that can store larger quantities of information in a smaller space than before, and that are more accessible to end users than previous systems. These developments enable the specialist to offer

a wider variety of information services and products to users, but also add to the complexity of the work and the knowledges and experience required to function adequately in this environment.

At the same time that the information world is growing more complex, technology offers more powerful tools to manage the flood of data. Indexers use computers to create and review bibliographic records and to assign indexing terms to those records. Catalogers search databases and create their own bibliographic records, which are then exported to the databases. Retrieval specialists use computers and telecommunications networks to search diverse databases and use post-processing software to integrate and refine search results.

Other changes in the occupation reflect both technological and organizational change. Trends such as flattening of organizational structures and decentralization have made the rapid dissemination of accurate information particularly important, in order to avoid duplication of effort in research, policy analysis, and other fields of endeavor. Many technical information specialists in various functions work directly with computer and telecommunications specialists to create improved systems that provide more efficient information transfer to users. Other technical information specialist functions that have taken on more importance in recent years are evaluation of user requirements for data and for automated information systems; participation in the development of new electronic products and services; facilitating user access to new information sources and technologies; developing gateway systems and promoting wider use of existing networks; facilitating the automation of specialized libraries; and providing full-text and analytical services to special clientele. Some technical information specialists have become specialized in the marketing of new products and services, and others in providing instruction to clientele on how best to use the increasing variety of products and services. Still others have become advisors to policy-makers in information management and in scientific research planning.

Rapid and continuing technological change increases the demand on those responsible for managing specialized information programs for short- and long-term planning. Technical information specialists continually need to evaluate new technological tools, and to try to anticipate the next development and its effect on information access. Since automated and telecommunications systems tend to have a life cycle of only a few years, information managers must plan for conversion to the next generation on a frequent basis. This includes planning for facility modifications needed to accommodate new systems and requirements (e.g., physical space and electrical system support for high-speed high-volume data transmission).

TERMINOLOGY - A glossary is not included in this standard because any listing of terminology in the information field would be unwieldy or of limited utility due to continued changes in technology. For definitions of standard terms, see the current editions of the "ALA Glossary of Library and Information Science," Heartsill Young, Ed., American Library Association, Chicago, and "The Librarian's Thesaurus," American Library Association, Chicago. For current meanings of evolving terms, especially in the automated systems area, consult other appropriate sources that are recognized by the information community.

For additional material about information work, see the standard for the [Librarian Series, GS-1410](#), and the standard for the [Library Technician Series, GS-1411](#).

TITLES

Technical Information Specialist Is the Title for All Nonsupervisory Positions in this Series.

Supervisory Technical Information Specialist is the title for positions that meet the criteria in the "[General Schedule Supervisory Guide](#)."

Parenthetical Titles

Agencies may add parenthetical titles to the above titles to identify the discipline or field of interest required for the position.

See the [Introduction to the Position Classification Standards](#) for additional guidance on using parenthetical titles.

EVALUATING POSITIONS

Evaluate nonsupervisory positions using the factor-level descriptions and assigned point values in this standard. Use the [Primary Standard](#) and related FES standards to assist in evaluating positions that may warrant higher or lower factor levels than those described. See [The Classifier's Handbook](#) and the [Introduction to the Position Classification Standards](#) for more information.

Apply the [General Schedule Supervisory Guide](#) to positions that meet the criteria for coverage.

GRADE CONVERSION TABLE

Total points on all evaluation factors are converted to GS grade as follows:

GS Grade	Point Range
9	1855-2100
10	2105-2350
11	2355-2750
12	2755-3150
13	3155-3600
14	3605-4050

FACTOR LEVEL DESCRIPTIONS

FACTOR 1, KNOWLEDGE REQUIRED BY THE POSITION

Level 1-6 -- 950 Points

A knowledge of established techniques and requirements of the employing organization, for example the prescribed thesaurus used for indexing and the rules governing changes to the vocabulary, the cataloging rules used by the organization, or the structure and content of internal databases. In addition, a knowledge of the commonly accepted concepts, standard methods, techniques, and principles of the subject-matter specialty required by the work. Knowledge is used to independently perform assignments involving the categorization, summarization, or location of scientific, technical, or other specialized information. Assignments do not require significant deviation from established methods and precedents and are characterized by such features as:

- ! information sources (articles, technical reports, proposed legislation) are of limited technical complexity and usually involve concepts and principles that are fairly well understood;
- ! information is obtained, analyzed, and organized using standard reference tools and established techniques and practices, such as application of existing indexing terms, customary reference interviewing techniques, standard search strategies, commonly available legal reference materials (e.g., the Congressional Record, Code of Federal Regulations), and foreign language dictionaries; and
- ! participation in formulating plans for changes and improvements are limited to development of factual data, such as usage data on new terms in the literature or frequently asked reference questions.

Illustrations:

- The specialist analyzes biomedical articles containing commonly understood concepts and principles in the diagnosis and treatment of disease, and clinical research and information on new therapies and devices. The specialist assigns Medical Subject Heading terms to express the scope and the subject content.
- The specialist provides reference services in electronics and general physics research where user needs are determined easily from interviews or written requests, and the relevant technical reports and research-in-progress reports can be readily obtained through standard search strategies. The specialist prepares current awareness bibliographies in subject areas based on user interest profiles.

- The specialist prepares digests of proposed legislation assigned lower difficulty codes, or of assigned portions of omnibus bills.

Level 1-7 -- 1250 Points

Knowledge of a wide range of techniques, methods, sources and procedures within the functional information area (e.g., indexing, thesaurus control, digest preparation, reference) and subject-matter knowledge requiring extended specialized experience is required to:

- ! modify standard information practices, precedents and techniques, adapt automated systems, or make significant departures from previous approaches to similar problems or projects, to solve a variety of information organization, access, and dissemination problems;
- ! evaluate, select, and adapt precedents to meet specialized information requirements; and
- ! apply standard practices of other fields and disciplines as they relate to the subject specialty.

At this level, assignments may also include staff assignments relating to program planning or coordination of services, such as marketing, or contracting and contractor oversight.

Illustrations:

- The specialist indexes journal articles and technical reports on soil science, analyzing content and assigning sufficient terms from the authorized thesaurus to describe the material. Indexing enables researchers to locate those articles and reports most directly related to the project at hand. The specialist enters information into the agency's on-line data base; recommends the addition, deletion, and modification of technical terms; and assigns broader, narrower, and related terms, to the thesaurus based on knowledge of developments in soil science research and on study of the literature.
- The specialist prepares digests and abstracts of proposed legislation, and revisions, amendments, and conference reports in the foreign relations and environmental arenas. The specialist compares bills with previous versions and with existing law; refers incorrect section references to the responsible congressional committee or staff office; checks other sources and databases for legislation too recent to be codified; keeps abreast of current events and does background reading in foreign relations and in environmental issues; determines work priorities based on own knowledge of major issues; and assigns Subject Indexing Terms for each introduced bill from the prescribed authority file, creating more specific terms where necessary.
- The specialist responds to requests for information concerning research in specific areas such as acoustics. Requests typically require considerable analysis on the part of the specialist to determine the specific research area and the types of information that will most directly meet

the requester's needs. The specialist searches agency and Department of Defense databases to obtain technical reports of completed research, and data on ongoing projects. The specialist uses a thesaurus with defense-related research and development terminology to select appropriate key words in order to retrieve only the most pertinent information.

- The specialist performs subject and descriptive cataloging of biomedical serials and monographs in Japanese and other East Asian languages.
- The specialist provides subject-area reference services for policy analysts by devising complex search strategies of Library of Congress and Congressional databases, and by querying other analysts.

Level 1-8 -- 1550 Points

Mastery of a subject area or of an information specialty to include knowledge of new developments and/or experimental theories in accessing, organizing or disseminating information, is required to:

- ! solve highly complex problems within the occupation;
- ! make significant recommendations to change, interpret, or develop important or innovative information policies, programs, approaches, or analysis methods; or
- ! develop new approaches for other experienced technical information specialists to use in solving a variety of problems or in expanding services.

The level of knowledge involved is that of a technical authority in a specialization, that is, either in the literature of a broad subject area or areas (e.g., complete weapon systems), or of a very complex and highly specialized subject area (e.g., plant genetics), or in a difficult information specialty (e.g., thesaurus development and management). Also at this level are assignments that involve developing services and/or products for users (e.g., information locators, specialized databases, communications interfaces, special reports/analyses) that serve as agency standards or as models for other information organizations outside of the agency or major component.

Illustrations:

- The specialist manages the thesaurus that controls indexing terms for a major segment of technical or scientific literature, such as defense-oriented research and development. The specialist reviews and screens recommendations for additions, changes, and deletions from indexers and users, insuring the integrity of the hierarchical and relational structure of the thesaurus for each change that is accepted; insures that terms with possible multiple meanings are clarified; performs frequent updates, corrections, and refinements to the recognition dictionary for a computerized system that identifies key words and phrases from titles and abstracts; and insures that all other dictionaries and indexing tools are compatible with the basic thesaurus.

- The specialist serves as a project leader for developing new or enhanced systems for the delivery of technical information. For example, the specialist conducts feasibility studies and works with computer specialists to develop gateway systems providing single access paths for authorized users to numerous secure and non-secure research and development databases, permitting easy combination and analysis of data from all of the accessed databases. The specialist conducts pilot studies of new technology applications in areas such as multimedia, expert systems, and information transfer networks between users and specialized libraries.
- The specialist plans, develops, and maintains computer-based files used for storage and retrieval of toxicological and environmental information of national and international scope. The specialist identifies, evaluates, and selects information sources; works with computer specialists to develop programs to manage the data; identifies and implements mechanisms for identifying, acquiring, and disseminating studies relevant to the cross-disciplinary aspects of toxicology, medicine, and the effects of toxic substances on the environment.

FACTOR 2, SUPERVISORY CONTROLS

Level 2-3 -- 275 Points

The supervisor defines the specialist's scope of responsibility and the objectives, priorities, and deadlines. The specialist is provided with more detailed assistance in unusual situations that do not have clear precedents. For example, the supervisor or a senior specialist provides guidance on difficult technical materials or a more complex search strategy.

The specialist plans and carries out the successive steps, handles deviations from established procedures, and resolves problems that arise in accordance with instructions, policies, previous training, or accepted information practices. The work typically includes conflicting information or relationships that require investigation and analysis by the specialist to determine the methods and procedures to use in the assignment.

Completed work is usually evaluated for technical soundness, appropriateness to the needs of users, and conformity to policy and requirements. The methods used in arriving at the end results are not usually reviewed in detail.

Level 2-4 -- 450 Points

The supervisor defines continuing areas of responsibility or long-term assignments and sets the general objectives (e.g., turnaround time for assigning indexing terms to articles or reports). Overall deadlines flow from the work situation (e.g., articles or reports to index, the legislative calendar), or, in the case of projects, the specialist consults with the supervisor to establish priorities, deadlines, and resources required.

The specialist, having developed expertise in the particular specialty or function, is responsible for planning and carrying out the work, resolving most of the conflicts that arise, coordinating the work with others, and interpreting policy on own initiative in terms of established objectives.

In some assignments, such as special projects, studies, or evaluations, the specialist also determines the approach to be taken and the methods to be used. The specialist keeps the supervisor informed of progress, potentially controversial matters, issues with far-reaching implications, and intractable problems.

The supervisor reviews completed work from an overall standpoint in terms of feasibility, compatibility with other information program requirements, or effectiveness in meeting objectives or achieving expected results.

FACTOR 3, GUIDELINES

Level 3-3 -- 275 Points

Guidelines include thesauri, dictionaries, cataloging rules and formats, authorities lists, literature in the specialized subject area, national and/or international information standards, and agency policies and regulations. The guidelines are not completely applicable to the work or have gaps in specificity. For example, assigning indexing terms requires some interpretation to cover evolving subject matter areas.

The specialist uses judgment in interpreting and adapting the guidelines for application to specific cases, problems, or situations. In addition, the specialist analyzes the applicability of standard information practices to specific circumstances and proposes regulatory or procedural changes to improve the effectiveness or efficiency of technical information operations.

Level 3-4 -- 450 Points

Guidelines are essentially the same as in Level 3-3; however, they are often inadequate in dealing with the more complex or unusual problems. For example, when the standard thesaurus or list of indexing terms does not cover rapidly evolving terminology or highly specialized fields of knowledge, considerable interpretation and adaptation is required.

The specialist at this level uses initiative and resourcefulness to deviate from or extend accepted methods, techniques, and practices (e.g., recommending addition of new indexing terms to cover new or rapidly changing subject areas); resolve important issues when precedents do not apply (e.g., evaluating and recommending new methods for information transfer); or identify areas for improvement in established methods of reference searching, indexing, or preparing legislative digests.

Level 3-5 -- 650 Points

Many of the controlling guidelines are broadly stated and nonspecific, such as agency-level policy issuances and regulations, Federal regulations and legislation, and national or international information standards. These guidelines are very general and require extensive interpretation and augmentation. When more specific guidelines do exist, they contain little direct application to the fundamental decisions the specialist must make.

The specialist uses considerable independent judgment and ingenuity in determining the intent of broad guidance, and in interpreting and revising existing policy and program guidance for use by others. The specialist is recognized as an authority in one or more major functions or program management. As such, the specialist is instrumental in interpreting and adapting general agency objectives into specific plans or programs, and/or in developing new and improved techniques, methods, or approaches.

FACTOR 4, COMPLEXITY*Level 4-3 -- 150 Points*

Assignments consist of various tasks and duties involving different and unrelated but established processes and methods. Typically, the work consists of analysis of literature of limited technical complexity, or performing a segment or segments of more specialized services or projects such as development of tables and graphs for a Congressional issue brief.

Decisions regarding what needs to be done depend on analysis of each objective and the nature of the information to be provided or categorized; choosing a course of action often involves selecting from many alternatives, including identifying and recommending minor deviations from established practices of the library or information center.

Accomplishing the assignment involves ascertaining and analyzing interrelationships, e.g., the effect of indexing decisions on the accessibility and usefulness of the information by users.

Examples of assignments at this level include retrieving information that is readily available using standard search strategies, finding background information on social welfare issues where sources are readily available, and assigning indexing terms where the decisions on choice and number of terms are apparent from the content of the article.

Level 4-4 -- 225 Points

Assignments typically consist of a substantial number and variety of duties within a specialization that requires a variety of techniques and methods to determine the best approach.

Decisions regarding what needs to be done include assessment of new or unusual circumstances, variations in approach, and/or incomplete or conflicting information. Planning, coordination,

and problem resolution are affected by the need to keep abreast of the specialized information needs of users; the increasing quantity of information available; missing, vague or conflicting bibliographic information; changes in the subject specialty; and changes in the means of accessing and disseminating information.

Assignments involve determining the nature and extent of information needs or problem areas, developing approaches best suited to answer those needs, and assigning priorities to the work. The work also typically involves refining the methods and techniques to be used.

Examples of work at this level are: determining the number and depth of indexing terms to assign to journal articles on aquaculture that enable researchers to identify only those materials directly relating to research projects; identifying patterns of new terminology usage in pathology literature, in order to recommend new terms and accompanying hierarchy of broader and narrower terms; selecting bills sufficiently substantive for preparation of digests and assigning priorities based on importance of issue(s); tracing legislative histories using a variety of source materials in order to understand import of proposed legislation, and to correct any erroneous section references; and adapting general cataloging rules and patterns developed for Anglo-American literature to technical material in foreign languages.

Level 4-5 -- 325 Points

Assignments consist of a broad range of technical information activities or require substantial depth of analysis, and typically require solving problems in information access and dissemination in particularly difficult and responsible circumstances.

Decisions regarding what needs to be done are complicated by the novel or obscure nature of the problems (e.g., establishing semantic rules and specialized dictionaries for machine-aided indexing) and/or special requirements for organization and coordination (e.g., working with other organizational units to consolidate chemical information dispersed in a variety of files and formats). Decisions also must be made in an environment of continual change, where information and information sources are rapidly expanding, much of the subject matter content is in flux, and the technology for gaining access to this information is undergoing major change.

Assignments require the specialist to be innovative and adept at modifying precedents, methods and techniques, originating new techniques, and developing and sharing new information sources.

Examples of work at this level are: in depth information searching in a broad subject field such as weapon systems; selecting, developing, and assigning indexing terms that accurately portray advanced research in human or plant genetics; and authoritative cataloging of highly technical articles and reports in foreign languages.

FACTOR 5, SCOPE AND EFFECT

Level 5-3 -- 150 Points

The purpose of the work is to provide access points to a variety of specialized articles or reports or to locate information relevant to users' needs using established practices and techniques.

The work affects other library and information personnel, and the ability of users to perform their missions. Furnishing accurate, timely, and responsive information enables users to accomplish their missions more effectively and helps prevent duplication of effort (e.g., defense-related research and development, legislative policy analysis).

Level 5-4 -- 225 Points

The purpose of the work is to provide expertise in organizing, accessing, or disseminating technical information in a specialized subject-matter area to meet users' needs for specialized and complex information. The work may include establishing criteria, such as expansions or enhancements to controlled vocabularies; formulating projects, such as planning a new service or system enhancement; or analyzing reports of advanced scientific research, or information on complex issues before the Congress, that are conflicting, incomplete, or unclear.

The work product or service affects access to and dissemination of specialized information provided by the agency, and other agencies that provide specialized information services; or access to and dissemination of information within or outside of the agency in support of legislative decision-making on major national issues.

Level 5-5 -- 325 Points

The purpose of the work is to analyze major issues in information access and dissemination; to resolve or recommend solutions for critical problems that are central to the mission of the organization; or to develop new approaches, methods, guides, or standards for use by other technical information specialists. The specialist provides expert advice and guidance covering a complex subject-matter area to users and other technical information specialists, or develops thesauri and related dictionaries for a major technical information program, or develops major new services or significant system enhancements.

The work affects the work of other technical information specialists and/or librarians, or the development of major aspects of technical information programs, or the efficiency of specialized information services rendered to scholars, research scientists, medical treatment professionals, military strategists, Members of Congress and congressional staffs, or other clientele within or outside the agency or major component.

FACTOR 6, PERSONAL CONTACTS AND FACTOR 7, PURPOSE OF CONTACTS

Match the level of regular and recurring personal contacts with the directly related purpose of the contacts and credit the appropriate point value using the chart below.

The Persons Contacted are:

2. Employees in the same agency, but outside the immediate organization, (e.g., users within the agency, other agency employees) and/or individuals or groups outside the agency, such as technical information specialists in other organizations and users outside the agency, in a moderately structured setting.

3. Individuals or groups from outside the employing agency, such as technical information specialists, librarians and/or subject-matter experts in other agencies and/or in non-Federal libraries, information services or laboratories; users from other agencies, or representatives of professional associations. This level may also include contacts with program officials several managerial levels removed from the specialist when such contacts occur on an ad hoc or other irregular basis.

The Purpose of Contacts is:

- b. To plan or coordinate work efforts, solve operating problems, or to provide advice to managers and users on noncontroversial issues and concerns.

- c. To persuade individuals and groups with different opinions or interests, e.g., to change criteria or methods, accept changes in thesauri and align related tools with these changes, accept modifications in levels and means of access to security classified and/or proprietary information, or cooperate in meeting objectives.

P U R P O S E		
C O N T A C T S	b	c
2	75	145
3	110	180

FACTOR 8, PHYSICAL DEMANDS

Level 8-1 -- 5 Points

The work is sedentary and includes no special physical demands. It may involve some walking, standing, bending, or carrying of light items.

Level 8-2 -- 20 Points

The work requires some physical exertion such as long periods of standing; or recurring activities such as bending, crouching, stooping, stretching, reaching; or recurring lifting of moderately heavy items such as boxes of books or journals.

FACTOR 9, WORK ENVIRONMENT

Level 9-1 -- 5 Points

Work involves everyday risks or discomforts typically associated with libraries, offices, meeting, and training rooms. Work areas are adequately heated, lighted, and ventilated.