

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5 GENERATE CARTOGRAPHIC PRODUCTS

Capability:

Cartographic products spatially depict reference theme data and land and mineral records thematic data in a hardcopy format. The capability to generate cartographic products shall provide for the construction of standard and custom cartographic products.

Standard cartographic products spatially depict thematic data for various plat types in a predefined geographic unit (e.g., township or 7 1/2 minute quadrangle). Standard products are intended to initiate the replacement of existing plats and enable users to access data with a minimal amount of interaction with the system.

Custom products shall be used to depict thematic data according to specific Bureau needs that can not be met with standard products. Generating custom cartographic products shall provide all the capabilities for generating standard cartographic products with the addition of the ability to customize products to meet the users' specific needs.

All cartographic products shall display thematic data that is current unless date is used to specify selection criteria.

Clarifications:

-No COTS capabilities shall be removed by this specification. However, some capabilities shall be restricted for certain user groups, as determined by BLM.

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1.2.5.1 GENERATE STANDARD CARTOGRAPHIC PRODUCTS

Capability:

Standard cartographic products spatially depict thematic data for various plat types such as oil and gas plats, coal plats, and land status. Standard products are intended to initiate the replacement of existing plats and enable users to access data with a minimal amount of interaction with the system.

The users shall be able to define an area of interest for the map component of the cartographic product based on a predefined geographic unit (e.g., township or 7 1/2 minute quadrangle) and select a plat type based on the thematic data available for the specified area of interest. A default cartographic template (templates shall vary depending on the geographic unit, e.g., the template shall be different for townships and quadrangles) shall define the placement of the map component, legend, as well as the content and appearance of the collar components including the placement of default cartographic elements. The user shall not be allowed to edit the appearance of the default cartographic template, assign alternate symbology, or modify cartographic elements. The user shall optionally be able to preview the standard cartographic product and perform limited label and arrow edits prior to producing a hardcopy of the cartographic product.

In addition to producing a hardcopy of the standard cartographic product, a number of supplemental products shall optionally be produced including but not limited to a data quality report for the thematic data within the map component, a reliability diagram, and a metadata report for the product.

The ALMRS Record User is the target user for producing standard cartographic products.

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1.2.5.1.1 SELECT AREA OF INTEREST

Capability:

The area of interest represents the geographic extent of the graphic to be portrayed in the display and final output product.

Selecting an area of interest shall enable the user to specify a geographic area using a default geographic unit. The user shall be able to select one of the default units and specify the area of interest alphanumerically or optionally with the "point and click" method. The geographic area of interest shall be specified based on a single township, 7 1/2 or 15 minute quadrangle (the actual geographic area covered by quadrangles, however, shall vary in states such as California and Alaska), case identifiers, inset window, and user defined rectangle. The user defined rectangle and case identifier methods shall only be provided as an option after the selection and the display of a township or quadrangle (cases and user defined rectangles must reside within the initial township or quadrangle based AOI).

Alphanumeric input for default geographic units shall include the following:

1. Number of the Township (Meridian, Township, and Range) (All states except those not supported by the rectangular public land survey system including Texas, Georgia, South Carolina, North Carolina, Tennessee, Kentucky, Virginia, West Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine, Hawaii, and the District of Columbia.
2. Name (MRC shall be an optional entry) of the USGS 7 1/2 or 15 minute quadrangle (users shall be able to enter the name of a quadrangle for all states, however, the actual geographic coverage within the quadrangle will vary in states such as California and Alaska)

Specifying the geographic area of interest shall be the initial mandatory function for all users when creating standard cartographic products. ALMRS records users are the primary user group targeted for this capability.

Clarifications:

- The capabilities in this process refer to a subset of the capabilities defined in 1.2.4.5.1 Define Area of Interest.
- The default method for specifying the geographic area of interest shall be entering an alpha/numeric description of the area.
- If the specified AOI is larger than the area covered by a single township or quadrangle, then the user shall be prompted to select a township(s)/quadrangle(s) for each plat to be generated.

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1.2.5.1.2 SELECT PLAT TYPE

Capability:

Select plat type enables the user to specify the land and minerals records data to be portrayed in the cartographic product. "Plat types" represent groupings of land and mineral records thematic data that shall be displayed collectively in a standard product. For example, the selection of Plat Type Oil and Gas represents the selection of a collection or group of data (e.g., oil and gas leases, unit agreements, and land status). The selection of a plat type, therefore, specifies multiple thematic data layers for land and mineral records with a single statement. The user shall be able to select multiple plat types from the list of available plats in the selected AOI, however, plats may not be overlaid in the same cartographic product view.

Alternatively, Master Title Plat (MTP) images and themes, generated from manually drafted title and use plats, can be displayed where other plat types are not available, or, as an historical reference. Other plat types may not be available due to insufficient spatial data to support accurate and complete plats. MTP images and themes may be geo-referenced, or, geo-related.

Selecting the plat type shall occur after the area of interest is established and a list of available plat types is provided to the user. This process shall be the second mandatory process to be executed by all users when generating standard cartographic products.

Users shall be able to select one of the following standard plat types:

Mineral Plats

1. Oil and Gas
2. Geothermal
3. Coal
4. Solid Minerals and Mineral Materials
(the specific mineral shall be used to determine the plat title)
5. Mining Claims, Mining Plans, and Mineral Contests

Land Plats

6. Title, ROWs and Easements, Leases, and Permits
7. Land Themes
8. Land Status

Special Use Plats that shall only be available to BLM users include:

9. Withdrawals, Classifications, Determinations, and Multiple Mineral Development
10. Trespasses

MTP Images and Themes:

11. Land Plats
12. Mineral Plats
13. Supplemental Plats
14. Historical Indices

All users shall have access to this capability, unless specified.

Clarifications:

- Specification of the plat type and area of interest shall determine the map title (see 1.2.5.1.3 Preview Cartographic Product).
- The capabilities in this process refer to a subset of the capabilities defined in 1.2.4.5.5 Determine Available Standard Thematic Views, and 1.2.4.5.6 Select Themes to Display.
- Some data themes may be included in more than one plat type.
- The capabilities for MTP images refer to a subset of the capabilities defined in 1.2.1.1 Access Geo-Referenced Spatial Themes and 1.2.1.2 Build and Access Geo-Related Reference Themes.

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-All MTP images must meet 1275 manual standards. All MTP image plats must include the image collar.

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1.2.5.1.3 PREVIEW CARTOGRAPHIC PRODUCT

Capability:

Users shall be able to preview cartographic products by displaying to the screen.

The ability to preview cartographic products on the screen shall provide users with the opportunity to carefully examine the graphic display of land and mineral records information prior to sending the product to a hardcopy output device. Previewing provides users an opportunity to inspect the product and decide whether or not it is acceptable to send to a hardcopy device. Previewing shall be used by the user to verify that the geographic area of interest and plat information are correct. The preview capability shall also be used to examine the placement of feature labels for possible modification.

The initial preview of all geographic data, symbology, text, labels, arrows, and cartographic elements shall be portrayed in the display according to how the products would appear at the default output scales (e.g., 1:24,000 or 1:63,360) for standard cartographic products. Variable scales shall be available when the area of interest is determined by a specification of case identifiers, user defined rectangle or inset window. A pick list of default scales shall be made available to the user to select scale. The user shall be provided with the capability to override default scales with a user specified scale or have the system compute scale based on the geographic coverage and the space allotted to plot spatial data on the product. If MTP Image Plat Type was chosen, user shall have the ability to view the images, pan & zoom, but shall not be able to modify the images.

The user shall be able to display a preview of the standard plat graphics. Standard products that shall optionally be previewed include; (1) a standard plat map product based on township and 7 1/2 or 15 minute quadrangle (the default scale shall be 1:24,000 unless a 15 minute quadrangle name is specified in which case the default scale shall be 1:63,360), (2) georelated documents, such as scanned supplemental plats, (3) case related documents, such as scanned documents, (4) geographic subsets of the standard product as determined by the specification of case identifiers, user defined rectangle or inset window for the area of interest. A report of cases within the area of interest but not graphically portrayed on the cartographic product shall be generated by process 1.2.5.1.6.2 Generate Case Report and inserted into the remarks section of the cartographic product.

This preview function shall be optional and made available to all users.

Clarifications:

- The preview displays shall use default symbology and font assignments as defined in the "style guides" (see Appendix X).
- All preview displays shall be generated containing a default set of cartographic elements that are graphically portrayed according to the default layout as specified in the cartographic template. This template shall vary according to the geographic unit that defines the area of interest and the plat type, (e.g., the templates for townships and quadrangles shall vary). Graphics shall be generated in accordance with elements and parameters for the layout are specified in the "style guides"
- The labels shall be sized and positioned according to default size and positioning parameters defined by the "style guide" for the plat type.
sheet for the standard thematic view selected for the cartographic product (see Appendix X)

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1.2.5.1.4 EDIT CARTOGRAPHIC SPECIFICATIONS FOR LABELS AND ARROWS

Capability:

The dynamic nature of the thematic data in ALMRS may create cartographic congestion and overlap of labels and arrows when the map component of the cartographic product is constructed. Limited interactive editing capabilities shall enable the user to change the cartographic specifications of labels and arrows to minimize cartographic congestion, minimize overlap, and improve the readability of the cartographic product. Modifications to cartographic specifications of arrows and labels shall be performed under strict limitations and shall not be permitted to alter or change the meaning of the cartographic product. Changes to the contents of labels shall not be permitted.

Changes to the cartographic specifications of labels and arrows shall only be performed for the cartographic product and shall not effect the default cartographic specifications of labels and arrows stored by ALMRS. This capability does not apply to MTP Image Plat Types.

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1.2.5.1.4.1 EDIT CARTOGRAPHIC SPECIFICATIONS FOR LABELS

Capability:

Editing the cartographic specifications for individual labels or stacks of labels shall enable the user to minimize cartographic congestion or overlap on the plot or display and improve readability of the product. This capability shall enable users to interactively move labels to alternate locations, rotate labels, and change the insertion points. These positioning changes may be necessary due to the need for automated/dynamic standard products.

Changes to the contents of labels shall not be permitted and changes to the cartographic specifications for a label shall not reflect a permanent change to the data base. Changes shall only be specified for specific cartographic products. Editing specifications shall include the following capabilities:

1. Change label placement
2. Change label rotation angle
3. Change label insertion point (lower left shall be the default insertion point)
4. Change justification (centered, left, and right)

This function shall be optional and available to all users. This capability does not apply to MTP Image Plat Types.

Clarifications:

- The user shall be able to change specifications for an entire theme, individual labels or blocks of labels
- The labels for all features shall be sized and positioned according to default size and positioning parameters defined by the "style guide" for the plat type at a scale of 1:24,000 or 1:63,360.

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1.2.5.1.4.2 EDIT ARROW PLACEMENT

Capability:

Edit Arrow Placement shall enable the user to modify the location of arrows to alternative locations to improve readability and ensure proper cartographic placement. The placement of an arrow shall only be done under strict limitations. The user shall not be permitted to alter or change the meaning of the cartographic product. Therefore, the arrow shall always be anchored to the feature as well as its associated label. This capability shall enable users to interactively move an arrow (within limitations of anchoring) to an alternate location. Positioning changes may be necessary due to the dynamic nature of standard products.

Changes made to the arrow placement shall not be saved in the master data base. This function shall be optional and available to all users. This capability does not apply to MTP Image Plat Types.

Arrow placement and edit functions shall include the following capabilities:

1. Automatic anchoring between feature and label
2. Dynamic arrow drag and anchoring retainment when repositioning labels
3. Automatic arrow generation when moving label outside of an area feature
4. Automatic arrow erasure when moving label inside an area feature
5. Change attachment point to label (insertion point)
6. Change attachment point to feature

Clarifications:

- The arrow shall always be anchored to the label when the label is repositioned. When a label is moved the arrow shall move with it while maintaining the anchor to its associated feature.
- The feature end of the arrow shall remain attached to the interior of its associative area feature or to the line of a linear feature at all times. The feature end of the arrow shall not be attached to a non-associative feature or to the edge of its associative feature (the boundary of an area feature or the end of a line feature). The label end of the arrow shall not be attached to a different label.

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1.2.5.1.5 PRODUCE CARTOGRAPHIC PRODUCT

Capability:

Producing cartographic products shall enable users to produce standard hardcopy graphic products (or copies of portions of these products) which portray the relative position of land and mineral records information. Hardcopy products shall provide a graphic portrayal of the Bureau's land and mineral records data base. This capability shall enable users to create hardcopy products from a "screen hardcopy device" or plotter. After a specific plotter is selected the output medium shall optionally be specified (e.g., matte or clear mylar, velum, paper, acetate). The default selection shall be paper.

Product uses include providing graphics for land and mineral leases, decision documentation, court exhibits, land ownership identification (i.e. private, federal, segregated, etc.), mining claim location areas, etc.

All geographic data, symbology, text, labels, arrows, and cartographic elements shall be plotted according to the default output scales (e.g., 1:24,000 or 1:63,360) for standard cartographic products. Alternate scales shall optionally be specified for products that used case identifiers, a user defined rectangle or an inset window. A pick list of default scales shall be made available to the user to select scale. The user shall be provided with the optional capability to override default scales with a user specified scale or have the system compute scale based on the geographic coverage and the space allotted to plot spatial data on the product.

Standard products shall include (1) standard plat map products based on township, and 7 1/2 or 15 minute quadrangle (the default scale shall be 1:24000 unless a 15 minute quadrangle is specified, in which case, the default scale shall be 1:63,360), (2) georelated documents such as scanned supplemental plats, (3) case related scanned documents such as patent documents, and (4) geographic subsets of the standard product as determined by the specification of case identifiers, user defined rectangle or inset window for the area of interest. A report of cases within the area of interest but not graphically portrayed on the cartographic product shall be generated by process 1.2.5.1.6.2 Generate Case Report and inserted into the remarks section of the cartographic product.

This function shall be optional but is the ultimate goal of the process. All other processes are performed with the goal of producing a standard cartographic product. All users shall have access to this capability.

Clarifications:

- The scale for all standard township and quadrangle based products shall be defaulted to 1:24000 or 1:63,360 depending on the selected area of interest.
- All hardcopy products shall be generated containing a default set of cartographic elements that are graphically portrayed according to the default layout as specified in the cartographic template. This template shall vary according to the geographic unit that was selected for the area of interest and the plat type, (e.g., the templates for townships and quadrangles shall vary). Elements and parameters for the layout are specified in the "style guide". MTP images shall not include a template, since the MTP collar must be included in the image.
- The labels shall be sized and positioned according to default size and positioning parameters defined by the "style guide" for the plat type. After a specific plotter is selected, the user shall be able to specify the output medium must be specified (e.g., matte or clear mylar, velum, paper, acetate). The default selection shall be paper.

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1.2.5.1.6 PREVIEW/PRODUCE SUPPLEMENTAL STANDARD PRODUCTS

Capability:

This process shall enable users to display and produce hardcopies of supplemental standard products. A number of supplemental products that compliment the cartographic products shall be made available to the user.

When a standard cartographic product is created, a number of additional products such as reports and diagrams shall be optionally available for the user. These supplemental hardcopy products include (1) a metadata report for the product (see process 1.2.5.1.6.1 Collect Cartographic Metadata for Standard Product), (2) a report of cases within the area of interest but not graphically portrayed on the cartographic product (not applicable to "zoom" products, i.e., products whose AOI is defined by case identifiers, a user defined rectangle, or an inset window), and (3) a land reliability diagram.

Clarification:

The user shall be able to optionally access the process 1.2.6.7 Produce ASCII Data Quality Report for producing a data quality report for all of the thematic data included in the cartographic product.

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1.2.5.1.6.1 COLLECT CARTOGRAPHIC METADATA FOR STANDARD PRODUCTS

Capability:

This process shall retrieve, display, and produce a hardcopy of a metadata report for the standard cartographic product. Metadata shall include information for the Area of Interest, Thematic Data, Symbology Assignments, Alternative Label and Arrow Placement, Map Title, Cartographic Template, Output Parameters (scale, projection, date of query, product size, and device), and the products process history. Refer to the Spatial Metadata Model for detailed information on process history. This information shall optionally be displayed to the screen or routed to a printer. The metadata collected by this process shall be used for creating an ASCII Data Quality Report (process 1.2.6.7) during exportation of the standard cartographic product.

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1.2.5.2 GENERATE CUSTOM CARTOGRAPHIC PRODUCTS

Capability:

The major objective of producing custom cartographic products is to accommodate requests for producing specialized or modified products in support of specific requests or project needs. Users shall also be able to generate a standard product (at the same level of automation) and modify it as needed. Another objective is to enable users to set up cartographic layouts and parameters that can be saved and later used to support production work. Requests for custom cartographic products shall vary in geographic extent, contents, and/or cartographic design. Access to a full range of interactive map composition capabilities shall be provided. All the functionality provided for generating standard cartographic products shall be available for custom cartographic products. The intent is to provide the display and map composition capabilities of a desktop GIS to non-public users while preventing modify capabilities to source data displayed in the cartographic product. The desktop GIS shall minimally meet the functionality contained in ArcView 3.0 or later release.

The user shall be provided with the capability to specify a "user defined" area of interest for the map component instead of being constrained to a limited criteria or set of predetermined (default) geographic units. Spatial data for the map component can consist of any combination of one or more plat types and themes as well as the results of alphanumeric queries. Users shall be able to optionally apply alternative assignments for symbology and labels, modify the map legend, and edit cartographic parameters for labels and arrows.

A default cartographic template shall define the initial placement, content, and appearance of the collar components. The user shall be provided with the option to select an alternate cartographic template. The cartographic template assigns default cartographic elements to the cartographic product. Users shall be able to remove elements from the product and select alternative elements from a Cartographic Element Library (CEL). The appearance and placement of cartographic elements shall be defined in the cartographic template and optionally modified.

The system shall provide capabilities to construct and save new cartographic templates (layouts) as well as modify, save and delete existing cartographic templates. New and modified cartographic templates shall optionally be saved to a library from which they shall be accessed for the construction of custom cartographic products. Users shall be able to construct and save new cartographic elements as well as modify, save, and delete existing cartographic elements. New cartographic elements shall optionally be saved to a library from which they can be later accessed for inclusion in custom cartographic products.

In addition to producing a hardcopy of the custom cartographic product, a number of supplemental products shall be available to the user including a meta data report for the thematic data included in the map component, a reliability diagram for the land coordinates, a case report identifying cases not graphically portrayed on the cartographic product, and a data quality report.

All inputs, selections, and edits defining the cartographic product shall optionally be saved for the product to a composite view in a personal work area. This capability provides for the reconstruction of the cartographic product at a later date using thematic data currently available in ALMRS.

All non-public users are the target user for producing custom cartographic products. Some capabilities shall be restricted for some user groups.

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1.2.5.2.1 DEFINE GEOGRAPHIC AREA OF INTEREST

Capability:

The area of interest represents the geographic extent of the graphic to be portrayed in the display and output product.

In addition to selecting areas based on default units (as defined in 1.2.5.1), the user shall have access to all capabilities described in 1.2.4.5.1 Define Area of Interest. This process shall be the initial mandatory function for all queries, subsequent displays, and generation of custom cartographic products (if the AOI has been previously identified with the selection of a composite view then this function shall not be mandatory).

Clarifications:

- The capabilities in the process refer to the entire set of capabilities defined in 1.2.4.5.1 define Area of Interest. This process shall include the capability to specify a date for the AOI which will allow the AOI to be defined with historical data. This date shall automatically be transferred to all subsequent queries of thematic data unless otherwise specified.
- The default method for specifying the geographic area of interest shall be entering an alpha/numeric description of the area.
- The area of interest shall automatically be saved to a composite view for a new product but optionally saved if the product is defined using an existing composite view.
- The display of thematic data shall include a 1/4 mile buffer beyond the AOI extent.
- A user shall only be allowed to save an AOI to a local work space, unless the user has permissions to save AOI to a centralized AOI library.

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1.2.5.2.2 SELECT PLAT TYPES AND MAP THEMES

Capability:

The purpose of this process is to provide capabilities for selecting the thematic data (within the area of interest) that shall be displayed on the screen or manipulated in subsequent processing. Four options shall be available to the user for selecting and/or deselecting thematic data:

1. Select based on a standard thematic view
2. Select based on the list of available themes
3. Select from a list of names that represent user defined sets of thematic data (thematic views of the data base)
4. Select based on a subset of a theme (see processes under 1.2.4.2.4 Display Results of Alphanumeric Query and 1.4 Process Alphanumeric queries and Reports).

All options shall provide the capability to select and deselect (inclusion or exclusion) data for the cartographic product. The legend for all custom cartographic products shall depict selected themes and/or thematic subsets (subthemes).

The user shall be able to use all options for selecting data interchangeably and in combination at any time in the selection process.

This process shall be a mandatory process for producing custom cartographic products (unless previously specified through the selection of a composite view).

Clarifications:

- The user shall have the option of saving the thematic data definition as a result of this process, to a composite view.

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A report of cases within the area of interest but not graphically portrayed on the cartographic product (not applicable to "zoom or pan" functions e.g., the report shall not be dynamically updated as the user in "zooming") shall be automatically generated (whenever a cartographic product is generated) and inserted into the remarks section of the cartographic product. The case identifiers with associated nominal land description shall be included in the report. If the remarks section is not large enough to accommodate the entire contents of the report, a separate report shall be generated that can be optionally printed or displayed. If a separate report is generated, the remarks section of the cartographic product shall be noted (Cases not Displayed in this Product are Recorded in a Separate Report).

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1.2.5.1.6.3 PREVIEW/PRODUCE LAND RELIABILITY DIAGRAM

Capability:

This process is optional and shall enable the user to display and produce a hardcopy of a land reliability diagram for the AOI (see 1.2.4.1.1 Display Rectangular Land Theme). If routed to a plotter, the scale of the reliability diagram shall be defaulted to 1:24,000 or 1:63:360 depending upon the scale of the cartographic product. If geographic subsets are specified, the scale of the reliability diagram shall be equal to the subset product.

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1.2.5.2.2.1 SELECT STANDARD THEMATIC VIEWS

Capability:

Select Standard Thematic View shall enable the user to specify a set of land and minerals records data (multiple themes) to be portrayed on the product with a single statement. "Standard thematic views" represent groupings of land and mineral records thematic data. For example, the selection of Oil and Gas shall represent the selection of a collection or group of data (e.g., oil and gas leases, unit agreements, and land status). Selecting a standard view, therefore, shall specify multiple thematic data layers for land and mineral records with a single statement. Users shall be able to select multiple views for a single cartographic product.

Select Standard Thematic View shall also provide the capability to select or deselect (inclusion or exclusion) thematic data contained within the view. A list of standard thematic views shall be generated and displayed after the area of interest is specified. The list shall be dynamic based on availability of data within the selected area. Only the thematic views that are available for the specified area of interest shall be listed. Standard views shall be listed by categories including mineral, land, and special use.

Selection of views shall define the data content for the map component of the cartographic product. The selection of one or more views shall result in an update to the preview display.

Clarifications:

- This process interfaces with process "1.2.4.5.6 Select Themes to Display" for the selection of standard thematic views for the cartographic product.

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1.2.5.2.2.2 SELECT THEMATIC DATA

Capability:

Selecting by theme/thematic-subset shall enable users to specify land and minerals records, land, geopolitical, and reference data for the cartographic product. This process shall also provide for the selection and deselection (inclusion or exclusion) of thematic data. This process interfaces with process "1.2.4 Process Spatial Queries and Display" for determining availability of thematic data for the area of interest and for selecting thematic data for the cartographic product. A list of thematic data shall be generated and displayed upon specification of the area of interest. The list shall be dynamic based on their availability within the selected area of interest. Only the data themes that are available for the specified area of interest shall be listed.

Selection of thematic data shall define the data content for the map component of the cartographic product. The selection of thematic data shall result in an update to the preview display.

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1.2.5.2.2.1 SELECT REFERENCE THEMES

Capability:

This capability shall enable the user to specify reference data for previewing and producing cartographic products. This process shall provide for the selection and deselection (inclusion or exclusion) of thematic data. A list of reference data shall be made available upon specification of the area of interest. The list shall be dynamic based on the availability of reference themes within the selected area of interest. Only the themes that are available for the specified area of interest shall be listed. Users shall also have the capability to select geo-referenced images as a display backdrop.

Selection of thematic data shall define the data content for the map component of the cartographic product. The selection of thematic data shall result in an update to the preview display.

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1.2.5.2.2.2 SELECT LAND AND MINERAL BASED THEMES

Capability:

This capability shall enable the user to specify land and mineral records data for previewing and producing cartographic products. This process shall provide for the selection and deselection (inclusion or exclusion) of thematic data. A list of land and mineral thematic data shall be made available upon specification of the area of interest. The list shall be dynamic based on the availability of land and mineral records themes within the selected area of interest. Only the themes that are available for the specified area of interest shall be listed.

Selection of thematic data shall define the data content for the map component of the cartographic product. The selection of thematic data shall result in an update to the preview display.

Clarifications:

- The capability shall be provided to spatially represent land and mineral based theme data either by case boundaries or by case event boundaries.

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1.2.5.2.2.3 SELECT LAND THEMES

Capability:

This capability shall enable the user to specify land data for previewing and producing cartographic products. This process shall provide for the selection and deselection (inclusion or exclusion) of thematic data. A list of available land data themes shall be made available upon specification of the area of interest. The list shall be dynamic based on the availability of land themes within the selected area of interest. Only the themes that are available for the specified area of interest shall be listed.

Selection of thematic data shall define the data content for the map component of the cartographic product. The selection of thematic data shall result in an update to the preview display.

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1.2.5.2.2.3 SELECT USER DEFINED THEMATIC VIEWS

Capability:

Specification by a user defined thematic view shall enable users to specify the name of a previously saved view to select thematic data. User defined thematic views represent a group of data defined by a previous query of the data base. The user shall be able to select from a list of user defined thematic views. This list of views shall not be dynamic based upon the specified area of interest. Multiple queries shall optionally be selected for a single cartographic output product.

Selection of views shall define the data content for the map component of the cartographic product. The selection of one or more views shall result in an update to the preview display.

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1.2.5.2.2.4 SAVE THEMATIC VIEW

Capability:

Users shall be able to save thematic views based upon combinations of queries and selections made in processes 1.2.5.2.2.1, 1.2.5.2.2.2, and 1.2.5.2.2.3. These "user defined" thematic views shall by default be saved to a personnel work area (through systems administration these views shall optionally be made accessible to other users). The user shall be allowed to save a new thematic view under a new name and/or modify a view by saving under an existing name. Saved views shall subsequently be made available for subsequent retrievals.

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1.2.5.2.3 PREVIEW/PRODUCE CARTOGRAPHIC PRODUCT

Capability:

The user shall be provided with the option of previewing cartographic products prior to producing hardcopies. Previewing products allows the user to visually inspect appearance and content to determine if any modifications are required. The user shall optionally preview products that supplement the cartographic product. These products include, but shall not be limited to a data quality report for the thematic data included in the map component, a reliability diagram for the land coordinates, a case report that identifies cases within the area of interest that can not be spatially depicted, and a cartographic product metadata report. The user shall be provided with the option of producing a preview or hardcopy of the cartographic product and associated supplemental products.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.3.1 PREVIEW CARTOGRAPHIC PRODUCT

Capability:

This process shall provide the user with the ability to preview a cartographic product with a screen display providing the user with an opportunity to carefully examine the graphic display of land and mineral records information, reference themes, label placement, symbology assignments, and the characteristics of cartographic elements prior to making a hardcopy. Previewing enables users to visually inspect the product for possible modification, determine if and where changes are needed, and decide whether or not it is acceptable as a final product. Previewing will also be used to verify that the geographic area of interest and thematic information are correct.

All geographic data, symbology, text, labels, arrows, and cartographic elements shall be displayed according to how products would appear at the calculated or specified output scale. A pick list of default scales shall be made available to the user to select scale. The user shall be provided with the optional capability to override default scales with a user specified scale or have the system compute scale based on the geographic coverage and the space allotted to plot spatial data on the product. A default cartographic template shall be used for custom products unless the user specifies an alternative template.

The user shall be able to optionally display a preview of the specified cartographic products including; (1) custom standard or plat products, (2) special project maps, (3) working maps and check plots (4) georelated documents such as scanned supplemental plats, (5) case related materials such as scanned patent documents, and (6) maps of areas identified with interactive zoom/pan functions and/or automatic zoom based on "point and click" to a symbol which represents an area of high data density (inset window). A report of cases within the area of interest but not graphically portrayed on the cartographic product shall optionally be generated by process 1.2.5.2.3.3.1 Generate Case Report and inserted into the remarks section of the cartographic product. For each of the products listed above, the user shall be able to retrieve a cost estimate of producing hardcopies.

The displays shall use default symbology and font assignments, however, the user shall be prompted for a map title. The user shall specify the scale or size of the output product as well as the output device to generate a "thumb nail" WYSIWG view of the product. This capability shall assist the user in evaluating the appearance of the cartographic product.

This preview function is recommended, but shall be optional for producing a final cartographic product.

Clarifications:

- Data shall be previewed (displayed), interactively, as thematic data is selected or as a group upon completion of the entire "Query Session."
- All preview displays shall be generated containing a default set of cartographic elements that are graphically portrayed according to the default layout specifications in the cartographic template for custom products (see Appendix X).

APPENDIX C - PROCESS SPECIFICATION REPORT**Note:**

1. Any edits performed to the collar of the cartographic product shall be nullified upon selection of an alternate cartographic template. These edits shall include the following:
 - a. modification of a cartographic element's parameters for the cartographic product
 - b. addition of new cartographic elements to the cartographic product
 - c. exclusion of cartographic elements from the cartographic product
2. Entry of a title for the cartographic product (see data flow, 1.2.5.2.2.5.1 CARTO PRODUCT UPDATES) shall be mandatory unless a composite view is selected to define the cartographic product.
3. Entry of parameters that define the coordinate system, sheet size, map scale, and output device (see data flow, 1.2.5.2.2.3.1 CARTO PRODUCT PARAMETERS) shall be mandatory unless a composite view is selected to define the cartographic product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.3.2 PRODUCE CARTOGRAPHIC PRODUCT

Capability:

Producing cartographic products shall enable users to produce custom hardcopy graphic products (or copies of portions of these products) which portray land and mineral records and geographic reference information on a "screen hardcopy device" or a plotter. This process plots or prints the selected products as displayed in section 1.2.5.2.3.1 Preview Cartographic Product, to a hardcopy device.

Products shall include (1) custom plat products, (2) custom built project maps, (3) working maps and check plots, (4) georelated graphics such as supplemental plats, (5) case related materials such as scanned patent documents, and (6) zoom maps of areas identified with zoom/pan or point and click functions. If portrayals of zoomed areas and supplemental plats are routed to the plotter a scale or size shall be specified.

If alternative symbology is not specified, the generation of output products shall use default symbology and font assignments. The user shall be prompted for a map title.

This function shall be optional but is the ultimate goal of the process. All other processes are performed with the goal of producing a cartographic product.

Clarifications:

- All products shall contain a default set of collar information (cartographic elements). Cartographic elements shall receive a default placement. Initial placement, size, rotation, and color of all cartographic elements within the collar shall be specified in the default cartographic template for custom products. Size, rotation, and color of maps, map legends, and titles within the collar shall also be specified in the default cartographic template for custom products.
- The labels shall be sized and positioned according to default size and positioning parameters defined by the "style guide" for the custom cartographic product (see Appendix X).
- All outputs shall optionally be copied to a file for redisplay or plotting.
- The user shall have the capability to select an alternative cartographic template.

Note:

1. Entry of a title for the cartographic product (see data flow, ACCEPT 1.2.5.2.2.5.1.5 NEW CARTO ELEMENT) shall be mandatory unless a composite view is selected to define the cartographic product.
2. Entry of parameters that define the coordinate system, sheet size, map scale, and output device (see data flow, 1.2.5.2.2.3.2 CARTO PRODUCT PARAMETERS) shall be mandatory unless a composite view is selected to define the cartographic product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.3.3 PREVIEW/PRODUCE SUPPLEMENTAL CUSTOM PRODUCTS

Capability:

This process shall enable users to display and produce hardcopies of supplemental products. A number of supplemental products that compliment the cartographic products shall be made available to the user.

When a cartographic product is created, a number of additional products such as reports and diagrams shall be optionally available for the user. These supplemental hardcopy products include (1) a metadata report for the product (see process 1.2.5.2.2.8.3 Collect Cartographic Metadata for Custom Product), (2) a report of cases within the area of interest but not graphically portrayed on the cartographic product (not applicable to "zoom" products), and (3) a land reliability diagram.

Clarification:

The user shall be able to optionally access process 1.2.6.7 Produce ASCII Data Quality Report for producing a data quality report for all of the thematic data included in the cartographic product.

The user shall be able to optionally access process 1.2.5.2.2.8.3 Collect Cartographic Metadata for Custom Products for providing metadata information about cartographic products.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.3.3.1 GENERATE CASE REPORT

Capability:

A report of cases within the area of interest but not graphically portrayed on the cartographic product (not applicable to "zoom" products) shall optionally be generated (whenever a cartographic product is generated) and inserted into as the remarks section or separate text block in the cartographic product. The case identifier and the nominal land description shall be included in the report. The user shall have the option to generate a report of this case information. If a separate report is generated, the remarks section of the cartographic product shall be noted (Cases not Displayed in this Product are Recorded in a Separate Report).

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.3.3.2 PREVIEW/PRODUCE LAND RELIABILITY DIAGRAM

Capability:

This process is optional and shall enable the user to display or produce a hardcopy of a land reliability diagram for the area covered by the AOI (see 1.2.4.1.1 Display Rectangular Land Theme). If routed to a plotter, the scale of the reliability diagram shall be default to the scale of the cartographic product, however, the user shall be able to specify a scale. If geographic subsets are specified, the scale of the reliability diagram shall be equal to the subset product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4 EDIT MAP COMPONENTS

Capability:

The map component of the custom cartographic product shall optionally be customized by: (1) assigning alternate symbology (through the map legend) or labels, (2) customizing display parameters of raster data, and (3) editing cartographic parameters for labels and arrows. In addition, the user shall be able to customize the map legend.

Assigning alternate symbology enables the user to resolve conflicting or confusing symbology assignments for the cartographic product. Assigning alternative labels enables the user to show specific attribute information. Editing the cartographic specifications of labels and arrows enables the user to minimize cartographic congestion or overlap and improve readability of the cartographic product. Editing the map legend enables the user to customize the appearance of the map legend. The appearance of raster data can be customized.

All additions or modifications performed for the cartographic product shall optionally be saved to a composite view and/or assignment table in a personal work area.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.1 UPDATE MAP SYMBOLOGY

Capability:

Updating map symbology for custom products shall enable users to specify alternative symbology assignments for themes or attributes to resolve display conflicts, minimize map confusion/noise, and highlight specific areas of interest. Changing symbology enables the user to customize symbology for a specific product and save alternative assignments for that product without changing default symbology assignments. Users shall have the capability to interactively choose alternative symbology from the master library/palette for the creation of alternative symbology assignments. These changes shall optionally be saved in an alternate symbology assignment table and named for later use. In addition, the user shall use this capability to customize the appearance of the product in accordance with user needs and highlight areas of interest.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.1.1 SELECT EXISTING SYMBOLOGY ASSIGNMENTS

Capability:

The user shall be able to specify alternative symbology assignment collections that were defined and saved for other cartographic products. Process 1.2.5.2.4.1.3 provides the capability to save alternative symbology assignments defined for cartographic products to a personal work area. Multiple alternative symbology assignment collections shall optionally be retrieved by name and used to override the default symbology assignments for the cartographic product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.1.2 CREATE NEW SYMBOLOGY ASSIGNMENTS

Capability:

Alternative symbology assignments shall be specified and used to override the default symbology assignments for the cartographic product. These alternative symbology assignments shall be created by assigning symbology to themes or attributes (including the ability to assign a symbol to a unique attribute of a feature). All alternative symbology assignments created for the cartographic product shall, at the user's option, be saved to a composite view (see process 1.2.5.2.4.1.3 for additional information).

Clarifications:

- When a symbology assignment does not exist for attributes the user shall be able to assign a symbol from the master library (this assignment shall not be saved as a default symbology assignment).
- The alternative assignments shall override default symbology assignments when the specific map product is displayed or plotted.
- Specified changes shall not modify assigned default symbology.
- Users shall be able to make changes to symbology from the legend key by pointing and clicking on alternative symbology in the master symbology library/palette. All changes shall be automatically reflected in subsequent preview displays of the product.
- If the same symbology is assigned to more than one theme or group of attributes, the symbology and text within the map legend shall be combined.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.1.3 SAVE SYMBOLOGY ASSIGNMENTS

Capability:

The alternate symbology assignments identified for the cartographic product shall optionally be named and saved to the composite view. These symbology assignments shall be retrieved by name and used to override the default symbology assignments for producing a cartographic product.

The alternate symbology assignments shall optionally be saved to the product specific view.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.2 MODIFY MAP LEGEND COMPONENTS

Capability:

The system shall provide users with capabilities to interactively modify the appearance of the map legend including text and graphic characteristics. Parameters for shape, rotation, position, color, and size (vertical and horizontal) shall optionally be entered and updated for individual legend items such as legend boxes, associated symbology, and text. Edits shall optionally be performed on the textual information within the legend. Text content as well as cartographic parameters shall optionally be edited. Users shall be able to edit cartographic parameters for text including position, size (vertical and horizontal), font, spacing (letters and words), and rotation.

Users shall be able to create, update, and delete items within the map legend.

Clarifications:

- Any changes in legend symbology shall be reflected in the map.
- System shall generate a default legend based on the data that is displayed in the cartographic product. This default shall be based on selected themes and their associated default symbology.
- The default placement for items within the legend shall be single columns with the text left justified.
- Changes shall optionally be saved to a composite view in a personal work area.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.3 EDIT CARTOGRAPHIC SPECIFICATIONS FOR LABELS AND ARROWS

Capability:

The dynamic nature of the thematic data in ALMRS may create cartographic congestion and overposting of labels and arrows when the map component of the cartographic product is displayed or plotted. Interactive editing capabilities shall enable the user to change cartographic specifications of labels and arrows to minimize cartographic congestion, minimize overlap, and improve the readability of the cartographic product. Modifications to cartographic specifications of arrows and labels shall not be permitted to alter or change the meaning of the cartographic product. Specification of label content changes shall also be permitted.

Changes to the cartographic specifications for labels and arrows shall only be performed for the cartographic product and shall not effect the default cartographic specifications of labels and arrows stored by ALMRS. All additions or modifications performed shall optionally be saved to a composite view, in a personal work area.

All capabilities for editing the cartographic specifications of labels and arrows provided for standard cartographic products shall be available for custom cartographic products. Additional capabilities shall be provided for custom cartographic products.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.3.1 EDIT CARTOGRAPHIC SPECIFICATIONS FOR LABELS

Capability:

Editing the cartographic specifications for individual labels or stacks of labels shall enable the user to minimize cartographic congestion or overlap on the plot or display and improve readability of the product. This capability shall enable users to interactively move a label to an alternate location; change text size, spacing and rotation angle for specific products.

Parameters shall optionally be saved as an alternative without altering the default label position. Changes shall be saved to a composite view. Changes shall not be made to the contents of individual labels or to the default cartographic parameters. Users, however, shall be able to specify alternative label contents by theme and thematic subset. In addition, the label shall always remain attached to its associated feature through placement or arrows.

Editing the cartographic specifications for labels shall include but shall not be limited to the following capabilities:

1. Change label placement (drag and drop)
2. Change label rotation angle
3. Change letter spacing
4. Change label size
5. Change label stacking
6. Change insertion point (the default insertion point shall be the lower right corner of the label block)
7. Change font
8. Change slant
9. Toggle labels on and off
10. Change line weight
11. Change color
12. Change justification of text within a label block (centered, left justified or right justified)

Clarifications:

- Cartographic label parameters shall optionally be changed for entire themes, individual labels or blocks of labels
- The labels for land and mineral records shall initially be sized and positioned according to default size and positioning parameters defined by the "style guide" for custom products (see Appendix X).
- Changes to specifications for labels shall optionally be saved to a composite view.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.3.2 EDIT ARROW PLACEMENT

Capability:

Edit arrow placement shall enable the user to move arrows to an alternative location for increased readability and proper cartographic placement. The placement of an arrow shall not permit the user to alter or change the meaning of the cartographic product. Therefore, the arrow shall always be anchored to the feature as well as the label. This capability shall enable users to interactively move an arrow (within limitations of anchoring) to an alternate location.

Changes made to the arrow placement shall only be saved in composite views but shall not replace default assignments.

Specific capabilities shall include but shall not be limited to the following:

1. Automatic anchoring between feature and label
2. Dynamic arrow drag and anchoring retainment when repositioning labels
3. Automatic arrow generation when moving label outside of an area feature
4. Automatic arrow erasure when moving label inside an area feature
5. Selection of attachment points to label (insertion point)
6. Selection of attachment point to feature
7. Change color
8. Change size of arrow head
9. Add or delete coordinate points along the arrow

Clarifications:

- Changes to arrow specifications shall optionally be saved to a composite view.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.4.4 EDIT PARAMETERS FOR RASTER DATA

Capability:

This process shall provide the user with capabilities to edit and save parameters for displaying raster data. Parameters shall be optionally saved to the composite view. See processes in 1.2.4.3 Display Reference Themes.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5 UPDATE/CREATE CARTOGRAPHIC ELEMENTS

Capability:

Custom cartographic products shall optionally be modified by creating cartographic elements and editing their cartographic parameters. The system shall provide capabilities to add new cartographic elements based on selections from a cartographic element library (CEL), edit parameters of elements in the cartographic product, build new elements, delete elements from cartographic products, modify the contents of elements, and substitute existing cartographic elements with alternative elements selected from a CEL.

All additions or modifications performed for the cartographic product shall optionally be saved to a composite view in a personal work area. New and modified cartographic elements shall optionally be saved to a CEL. Saving elements to the master CEL shall be performed only upon approval from the Data Administrator. The system shall also enable users to delete elements from their personal library of cartographic elements. All non-public users are the intended target group for saving to personal CEL's. Cartographers, Spatial Data Maintainers are the intended target group for saving to master CEL's.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.1 UPDATE CARTOGRAPHIC ELEMENTS FOR THE CARTOGRAPHIC PRODUCT

Capability:

Updating cartographic elements provides capabilities to add and remove elements from the cartographic product. In addition, the system shall enable users to edit the cartographic parameters for user identified as well as default elements to change the product's appearance. Default categories of elements in the CEL include but shall not be limited to (1) North Arrows, (2) Bar Scales (the fractional scale shall be dynamic), (3) Agency Logos, (4) Index Maps (default shall be system generated based on the area of interest located within the initial reference map), (5) Neat Lines, (6) Additional Disclaimers, (7) Blocks of Text, (8) Diagrams, and (9) Graticules. Other default elements include the map component, title, and map legend (the contents of these elements shall not receive default assignments). The user shall also be able to add text blocks, plot files, and composite views as cartographic elements to the cartographic product.

APPENDIX C - PROCESS SPECIFICATION REPORT**1.2.5.2.5.1.1 EDIT PARAMETERS FOR CARTOGRAPHIC ELEMENTS IN THE CARTOGRAPHIC PRODUCT****Capability:**

Editing the parameters for cartographic elements shall provide capabilities to specify the selection, size (vertical and horizontal), rotation, color, and placement of cartographic elements. The initial cartographic product shall contain user defined as well as default elements. The user shall be able to interactively (point, drag and drop) to specify the selection, placement, rotation, and size of cartographic elements. Users shall be able to edit parameters of all cartographic elements including elements selected from a CEL as well as the other user identified elements. User defined elements include shall include but shall not be limited to the map component, title, legend, text blocks, plot files, and composite views.

Changes to the parameters for the cartographic elements shall optionally be saved to a composite view for the cartographic product. These edits shall not alter the parameters of the default cartographic elements contained in the cartographic template selected for the cartographic product.

Clarifications:

- The initial parameters for default cartographic elements shall be specified in the "style guide" for custom products and included in the initial cartographic template (see Appendix X).

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.1.2 REMOVE CARTOGRAPHIC ELEMENT FROM THE CARTOGRAPHIC PRODUCT

Capability:

The system shall provide capabilities to remove default as well as user identified cartographic elements from the cartographic product. Certain cartographic elements including disclaimer(s) and the date/time stamp shall not be removed from the cartographic product.

Exclusions of cartographic elements from the cartographic product shall optionally be saved to a composite view for the cartographic product. Removal of cartographic elements from the cartographic product shall not alter the set of default cartographic elements defined by the template.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.1.3 ADD CARTOGRAPHIC ELEMENT TO CARTOGRAPHIC PRODUCT

Capability:

The system shall provide capabilities to select new cartographic elements from a cartographic element library and add them to the cartographic product. Existing cartographic elements in the cartographic product shall optionally be substituted with cartographic elements selected from a Cartographic Element Library. Certain cartographic elements including disclaimer(s) and the date/time stamp shall not be removed from the cartographic product through substitution.

Additions of new cartographic elements or substitutions of elements shall optionally be saved to a composite view for the cartographic product. Additions or substitutions of cartographic elements shall not alter the set of default cartographic elements defined by the cartographic template selected for the product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.1.4 ADD PLOT FILES, COMPOSITE VIEWS, AND TEXT BLOCKS AS CARTOGRAPHIC ELEMENTS

Capabilities:

The system shall provide the capability to add plot files, composite views, and text blocks (text files) as cartographic elements to the cartographic product. The system shall enable users to specify the names of existing plot files, composite views, and text block for inclusion in the product as cartographic elements. The inclusion of composite views shall provide users with the potential for dynamic elements, however, the selection of a plot file provides a static element.

Users shall be provided with capabilities to substitute plotfiles, composite views, and text blocks for elements within the cartographic product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.1.5 ENTER CONTENTS OF MAP TITLE

Capability:

This process shall provide the user with capabilities to specify and edit the contents of alphanumeric text (upper and lower case) in the map title. The user shall be able to enter and edit cartographic parameters for the map title with process 1.2.5.2.5.1.1. Text content, position, size (vertical and horizontal), spacing, font, line breaks shall optionally be edited within the map title.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.2 BUILD CARTOGRAPHIC ELEMENTS

Capability:

Building elements provides the capabilities to create cartographic elements to address special drafting requirements. This capability shall enable the user to create new textual as well as graphic cartographic elements and use them to customize the cartographic products. The user shall be provided with drafting capabilities for building elements and create polygons, points, lines, and arrows which meet specific user needs. In addition, the system shall provide the capabilities to create graphic objects including squares, rectangles, circles, ellipses, straight lines, and curved lines as well as assign symbology to points, lines, and polygons that have been created.

Users shall be provided with text entry and edit capabilities to construct blocks (multiple lines) of text or enter individual text elements (single line of text). The system shall provide capabilities to specify font, text size (horizontal and vertical), line breaks, slant, character spacing, word spacing, and line spacing. The system shall also provide the capability to automatically wrap text around graphic objects. The user shall be able to combine graphics and text information into a single cartographic element.

Clarifications:

- The new cartographic elements shall optionally be saved in a personal library or master library. Additions to the master CEL shall be performed only upon approval from the data administrator (based on assigned privileges).
- The user shall be able to import and export elements in a variety of standard formats including BMP, TIFF, and CGM, to further expand these capabilities.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.3 MODIFY CONTENTS OF CARTOGRAPHIC ELEMENTS

Capability:

This function provides users with the ability to edit cartographic elements selected from the users personal library or master library of cartographic elements in support of management requests for custom products. All changes shall optionally be saved as a new element in the user's personal or master library of cartographic elements or as an update to an existing element in the user's personal library. Both text and graphic data within the elements shall optionally be created, updated, and deleted. The user shall have access to drafting capabilities as well as text entry and editing capabilities.

The user shall be able to interactively (point, drag and drop) edit specifications for placement, rotation, scale, and color of text and graphic information; edit text information and specify text size (horizontal and vertical), slant, font, character spacing, word spacing, and line spacing; wrap text around objects; change graphic objects including squares, rectangles, circles, ellipses, straight lines, and curved lines (using a shape tool to drag and draw the element or arrow); change assignments for symbology to graphic objects. The user shall be able to edit combinations of graphics and text information in a single cartographic element.

The user shall be able to interactively change the cartographic specifications for elements singly or as a group.

Clarifications:

- Edited cartographic elements shall optionally be saved in a personal or master library. Saving elements in the master CEL, however, shall be performed only upon approval from the data administrator (based on assigned privileges). Only new cartographic elements shall optionally be saved to the master CEL.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.5.4 DELETE CARTOGRAPHIC ELEMENT

Capability:

The user shall be provided the capability to delete a cartographic element from their personal library of cartographic elements, or, if user has permissions, from the master library.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.6 SELECT/UPDATE CARTOGRAPHIC TEMPLATE

Capability:

Cartographic templates ensure concise and readable cartographic products that consistently portray land and mineral records thematic data, reference theme data, and cartographic elements. The cartographic template defines the placement, content, and appearance of cartographic elements within the collar.

The user shall be provided with the option of selecting an alternative cartographic template for producing a cartographic product. The default cartographic template shall automatically be provided upon the creation of a custom cartographic product if an alternative cartographic template is not selected.

The system shall provide the capability to construct new cartographic templates and modify existing templates. Users shall also be able to delete a template. New or updated cartographic templates shall optionally be saved to a personal or master library. A template within these libraries shall optionally be specified as an alternative for previewing and producing a custom cartographic product.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.6.1 SELECT CARTOGRAPHIC TEMPLATE FROM LIBRARY

Capability:

A default cartographic template for custom cartographic products shall define the placement, content, and appearance of other elements within the collar.

Users shall be provided with the option of selecting an alternate cartographic template from a master or personal library of cartographic templates. The selected cartographic template shall replace the default cartographic template for producing the cartographic product.

The content of the current cartographic template for the cartographic product shall optionally be modified as specified by process 1.2.5.2.5. All modifications performed for the cartographic product shall optionally be saved to a composite view in a personal work area.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.6.2 MODIFY CARTOGRAPHIC TEMPLATE FROM LIBRARY

Capability:

This capability shall enable the user to design, build, and edit cartographic output products through Cartographic Product Templates (CPT). The use of Cartographic Product Templates allows products to be built in a modular fashion for efficient editing and reconstruction at a later date. Templates should be most beneficial in map production activities where the cartographic design of a product is the same but the map data changes. The template defines the selection, position, size, and rotation (default shall be horizontal), of all cartographic elements. The template serves as a blue print for the cartographic product.

Users shall be able to create, update, and delete information within the template, as well as save, rename, and delete entire templates. Templates shall optionally be saved to a personal library or master library. Alternative templates shall optionally be specified to produce custom cartographic products.

Each cartographic product shall be assigned an initial template that references a minimum of cartographic elements from the Cartographic Element Library (defined by the style guide for custom products). The template shall also reference user defined elements including the map component, legend (legend shall initially be system assigned), and map title. Other user defined elements including text blocks, composite views, and plot files shall also be optionally added. Scale shall optionally be user defined or system generated. The date and time stamp shall be system generated. The values for date and time in the date/time stamp shall reflect the date and time that the first query was made on the records data base.

The cartographic template that is interactively constructed or modified in a preview or display session shall be used for generating equivalent output to the plotter.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.6.2.1 SELECT CARTOGRAPHIC TEMPLATE FROM LIBRARY

Capability:

Before a cartographic template can be modified a cartographic template shall be selected by name from a cartographic template library.

The creation of a new cartographic template shall begin with the default cartographic template for custom cartographic products. Thus, the selection of a cartographic template shall not be required for the creation of a new cartographic template. The default cartographic template for custom cartographic products shall automatically be selected for the user.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.6.2.2 UPDATE CARTOGRAPHIC ELEMENTS FOR CARTOGRAPHIC TEMPLATE

Capability:

Updating cartographic elements shall enable users to add, substitute, and remove cartographic elements from a specified template. Elements shall optionally be added from personal or master Cartographic Element Libraries (CELs). In addition, plot files, composite views and text blocks shall optionally be added, substituted and removed from a cartographic template. A disclaimer and Time/Date Stamp cartographic elements shall accompany all cartographic templates.

Users shall also be able to change the cartographic parameters for any elements within the template. Parameters include, size, color, rotation, and placement.

Users shall be able to save cartographic templates in a master or personal library from which they shall be retrieved for subsequent use.

APPENDIX C - PROCESS SPECIFICATION REPORT

1.2.5.2.6.2.2.1 EDIT PARAMETERS OF CARTOGRAPHIC ELEMENTS IN CARTOGRAPHIC TEMPLATE

Capability:

The cartographic parameters for elements in the cartographic template shall be edited to customize the cartographic elements for the selected cartographic template.

The user shall be able to interactively specify (point, drag and drop) the selection, placement, rotation, color, and size of cartographic elements. Users shall be able to perform this function on any cartographic element including those selected from a CEL or defined in a separate process by the user (specific default and user defined elements). Default and user defined elements include the map component, map legend, and map title as well as text blocks, plot files, and composite views.

Position, size (vertical and horizontal), spacing, font, line breaks shall be optionally edited for the map title and text blocks.

Clarifications:

- Default elements and their placement and size shall be system generated using criteria in the style guide for custom products and defined in the cartographic template (see Appendix X).

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1.2.5.2.6.2.2.2 REMOVE CARTOGRAPHIC ELEMENT FROM THE CARTOGRAPHIC TEMPLATE

Capability:

Existing cartographic elements in the selected cartographic template shall optionally be removed from the cartographic template. Mandatory cartographic elements including the disclaimer and the date/time stamp shall not be removed from the cartographic template.

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1.2.5.2.6.2.2.3 ADD CARTOGRAPHIC ELEMENT TO CARTOGRAPHIC TEMPLATE

Capability:

New cartographic elements shall optionally be selected from the master cartographic element library or a user's personal cartographic element library and added to the selected cartographic template. Existing cartographic elements in the cartographic template shall be optionally substituted by new cartographic elements selected from a CEL. Mandatory cartographic elements including the disclaimer and the date/time stamp shall not be substituted.

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1.2.5.2.6.2.2.4 ADD PLOT FILES, COMPOSITE VIEWS, AND TEXT BLOCKS AS CARTOGRAPHIC ELEMENT

Capabilities:

The system shall provide the capability to add plot files, composite views, and text blocks (text files) as cartographic elements to the cartographic template. The system shall enable users to specify the names of existing plot files, composite views, and text blocks for inclusion in the template as cartographic elements. The inclusion of composite views shall provide users with the potential for dynamic elements, however, the selection of a plot file provides a static element.

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1.2.5.2.6.2.3 GENERATE CARTOGRAPHIC TEMPLATE IN LIBRARY

Capability:

The user shall be able to create and save custom cartographic templates by modifying existing cartographic templates or building new cartographic templates.

The modification of cartographic templates from the master or personal library shall begin with the selection by name of a template from the library of cartographic templates. The selected cartographic template shall optionally be modified and saved to the library under a new or existing name or to the personal library under a new name. Cartographic templates in the cartographic template library shall not be modified and overwritten without approval from the system administrator.

The creation of a new template shall begin with the default template for custom products (parameters are defined in the style guide).

The parameters for cartographic elements in the cartographic template shall be customized in accordance with process 1.2.5.2.6.2.2.1. New cartographic elements shall be added to the cartographic template and existing cartographic elements shall be removed from the cartographic template in accordance with processes 1.2.5.2.6.2.2.2, 1.2.5.2.6.2.2.3, and 1.2.5.2.6.2.2.4.

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1.2.5.2.6.2.3.1 CREATE CARTOGRAPHIC TEMPLATE IN LIBRARY

Capability:

The user shall be allowed to save the cartographic template selected for modification to the master or **personal** library under a new name. Cartographic templates shall not be saved to the master cartographic template library without approval from the system administrator.

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1.2.5.2.6.2.3.3 MODIFY EXISTING CARTOGRAPHIC TEMPLATE IN LIBRARY

Capability:

The user shall be able to modify and save a cartographic template to the master or personal library under its previously assigned name. This process shall not allow users to overwrite the names of a cartographic template that is not selected. Changes that are made to cartographic templates shall not be saved to the master cartographic template library without approval from the system administrator (based on assigned privileges).

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1.2.5.2.6.3 RENAME CARTOGRAPHIC TEMPLATE IN LIBRARY

Capability:

The user shall be able to rename any cartographic template in their personal or master cartographic template library. The user shall first select a cartographic template from the cartographic template library. A new name will be entered to replace the existing name of the selected cartographic template.

The user shall use COTS to rename cartographic templates in the master library. Cartographic templates in the master cartographic template library can not be renamed without approval from the System Administrator (based on assigned privileges).

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1.2.5.2.6.4 DELETE CARTOGRAPHIC TEMPLATE FROM LIBRARY

Capability:

The user shall be able to delete any cartographic template from their personal or the master cartographic template library.

The user shall use COTS to delete cartographic templates from the master library. The deletion of cartographic templates from the master library shall not be permitted within the ALMRS application without approval from the Data Administrator (based on assigned privileges).

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1.2.5.2.7 SAVE/RETRIEVE COMPOSITE VIEW

Capability:

The collection of inputs, selections, and edits defining a cartographic product shall optionally be assigned a name and saved in a personal work area. This collection defines the contents of a cartographic product is referred to as a "composite view." Composite views shall optionally be retrieved and edited to modify or create various cartographic products. Composite views shall allow cartographic products to be reconstructed using current or historical thematic data. In addition, information shall optionally be edited within the view to support quick edits and regeneration of cartographic products.

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1.2.5.2.7.1 SAVE COMPOSITE VIEW

Capability:

The collection of inputs, selections, and edits defining a cartographic product shall optionally be assigned a name and saved in a personal work area. This definition for a cartographic product is referred to as a "composite view."

Information referenced in the composite view includes but shall not be limited to the following:

1. Area of Interest (mandatory - user defined)
2. Selected Thematic Data (mandatory - user defined thematic view)
3. Symbology Assignment Table (default and any user defined)
4. Raster Data Output Parameters (Contrast and Brightness) for displaying and plotting raster data (default - user defined)
5. Labeling and Arrow Assignments and Parameters (user defined)
6. Cartographic Template (with edits to parameters for cartographic elements and contents of the map title - default or user defined)
7. Information about modifications to the template including plot files, contributing text blocks/files, cartographic elements, and the map title.
8. Output Parameters (coordinate system, scale, device - default or user defined, product size, date of query).
9. Map Legend Parameters (user defined)

Every cartographic product shall have a composite view that can be retrieved and edited. Even if the user elects not to save the composite view under an assigned name, the system shall create a view for the product.

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1.2.5.2.7.1.1 CREATE NEW COMPOSITE VIEW

Capability:

The user shall be provided with the capability to create a new composite view and save it under a unique name (user assigned). The information referenced in a composite view (see 1.2.5.2.7.1) shall be saved to a view as the cartographic product is being composed.

In addition, the user shall be able to edit an existing composite view and save it to a new composite view under a different name.

Information within the composite view shall optionally be updated during the interactive process of modifying the cartographic product. If changes are saved to a new composite view, the original composite view shall remain unchanged, under its existing name.

Users shall be able to edit the contents of all entries within the composite view including (1) Area of Interest, (2) Selected Thematic Data, (3) Symbology Assignment Table, (4) Raster Data Output Parameters (Contrast and Brightness), (5) Labeling and Arrow Assignments and Parameters, and (6) Cartographic Template, (7) Template Modifications, (8) Output Parameters (including, but not limited to coordinate system, scale, product size, device, and date of query), and (9) Map Legend Parameters.

Clarification:

The user shall optionally be able to retrieve the composite view by name and display its contents in the format of a "form." The user shall be able to interactively edit the textual information within each field of the form and save changes under a new name.

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1.2.5.2.7.1.2 UPDATE EXISTING COMPOSITE VIEW

Capability:

Information within composite views shall optionally be updated and saved to define changes in a cartographic product. Information in the composite view, shall optionally be updated as part of the interactive process of modifying the product. Thus, as the user interactively composes the product in selection and preview sessions, information shall optionally be saved to the current composite view.

Users shall be able to edit the contents of all entries within the composite view including (1) Area of Interest, (2) Selected Thematic Data, (3) Symbology Assignment Table, (4) Raster Data Output Parameters (Contrast and Brightness), (5) Labeling and Arrow Assignments and Parameters, and (6) Cartographic Template, (7) Template Modifications, (8) Output Parameters (including, but not limited to coordinate system, scale, product size, device, and date of query), and (9) Map Legend Parameters.

Clarification:

The user shall optionally be able to retrieve the composite view by name and display its contents in the format of a "form." The user shall be able to interactively edit the textual information within each field of the form and save changes to the current view.

1.2.5.2.7.2 RETRIEVE COMPOSITE VIEW

Capability:

The user shall be provided with the capability to retrieve a composite view by its assigned name for producing a cartographic product and/or editing the product through 1.2.5.2.8.1.1 and 1.2.5.2.8.1.2.

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1.2.5.2.7.3 COLLECT CARTOGRAPHIC METADATA FOR CUSTOM PRODUCTS

Capability:

The process shall retrieve, display, and produce a hardcopy report of the metadata for a custom cartographic product. Metadata shall include all of the information stored in the Composite View (see process 1.2.5.2.7.1 Save Composite View for a listing of the data) with additional information about the product's process history. Refer to the Spatial Metadata Model for detailed information on process history. This information shall optionally be displayed to the screen or routed to a printer. The metadata collected by this process shall be used for creating an ASCII Data Quality Report (process 1.2.6.7) during exportation of the standard cartographic product.