

Reverb Order Workflow Rework

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1 Overview

This document describes a proposed redesign of the Reverb ordering workflow and various improvements enabling easier metadata access for individual collections and granules.

2 Background

Reverb provides a variety of options for retrieving, ordering and servicing data and metadata indexed in ECHO's catalog. Much of this activity is coordinated via the shopping cart mechanism, a cumbersome process that requires several pages of data collection and confirmation.

This document proposes a name change from "Shopping Cart" to "My Data". Many users are confused by the use of the term "Shopping Cart" because of the implication of cost. We want to alleviate this confusion and make it clear that all data is free. The expected result of a search originated from within Reverb is for the end user to act upon data that has been deemed relevant by putting that data in his "My Data" area. This allows the user to pick specific items from a set of results rather than requesting data that might not be required and putting extra burdens upon the system.

When a user goes through the process of accessing any granules that have been added to his "My Data" area he is often required to make option selections related to that request. The data provider facilitating this request defines these options using the echo-forms specification (<http://earthdata.nasa.gov/library/echo-forms-specification>) and can represent a variety of required or optional fields.

Currently, there is much room for improvement within the ordering workflow. The following list of issues is addressed by the proposed rework. When appropriate, an ECHO NCR number is provided for reference. Each item will be referenced individually as part of the proposed changes section of this document.

1. Reverb should have the ability to retrieve an individual granule or dataset's full metadata in a variety of formats without adding it to the shopping cart. (NCR 11013357)
2. Reverb should display the dataset information for any granules that are included in an order. (NCR 11013425)
3. It should be easy to distinguish among various activities available for specific items in the document, an item that has associated services available but is not orderable, should be easily identified. (NCR 11013440)
4. Reverb should reduce the number of steps required to complete an order. (NCR 11013421)
5. Reverb should allow the user to review any relevant option selections immediately prior to submitting an order. (NCRs 11011983, 11013220)
6. Reverb's use of the term shopping cart is confusing and implies that data might not be free (Source: Blink Usability Study)

7. Often a user is not sure of what happens to data that isn't included in the requested activity if they move through the workflow. Text boxes with guidance can aid in informing the user. (Source: Blink Usability Study)
8. Users are frustrated by the current limit of 2000 granule/items within an access request. This document suggests that Reverb could be modified to allow for arbitrarily large accesses and prevent undue burden on data providers by splitting a Reverb order into several, smaller orders/access requests that at or under the 2000 item limit. (Source: countless user support tickets fielded by ECHO Operations)

3 Proposed Changes

3.1 User Interface Mockups

3.1.1 Allowing Direct Metadata Download for Individual Catalog Items

The first proposed change to the workflow involves making metadata immediately available for download directly from the item's information view. Currently, the informational dialog for an item contains a link "Show Metadata" which doesn't display a specific format of the data. This should be augmented to allow for the direct download of metadata in a format that can be selected from a dropdown form element. Refer to the screen mockup (Figure 1) below for a possible implementation. Notice that a user can directly download a metadata file in a format of his choosing via a select dropdown and an added "Download" button. This makes ECHO metadata immediately available to a Reverb end-user in a variety of formats, including ISO19115 and directly addresses changes requested as a part of NCR 11013357.

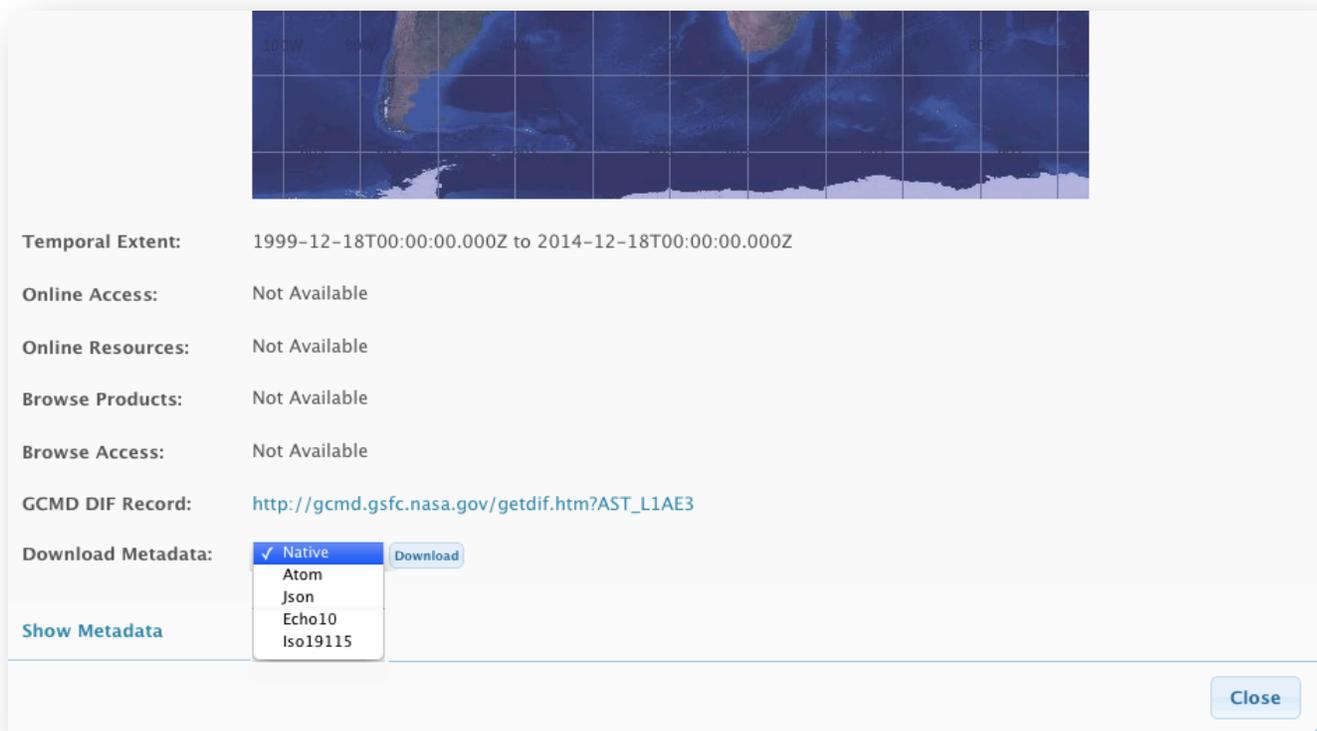


Figure 1 Allowing for Metadata Download from a catalog item information dialog

3.1.2 Reverb “My Data” Interface Changes

This proposed change is best explained with several screen shots of the proposed workflow. The ordering process will be split across two pages (down from the existing five step ordering process) as requested in NCR 11013421. The first step involves reviewing “My Data” contents and selecting the desired activity (Figure 2) while the second step guides the user through the option selection and the various follow-on activities available from this area (depicted in Figures 3 through 6). Each of the following wireframes shows a mockup of the new workflow steps. Please refer to the annotations below each figure for detailed information about the feature.

Reviewing “My Data”

The shopping cart view would be overhauled and renamed to provide a summary of options at the top of the page and provides a Collection centric view in contrast with the existing item-focused shopping cart. This works to address NCR 11013425.

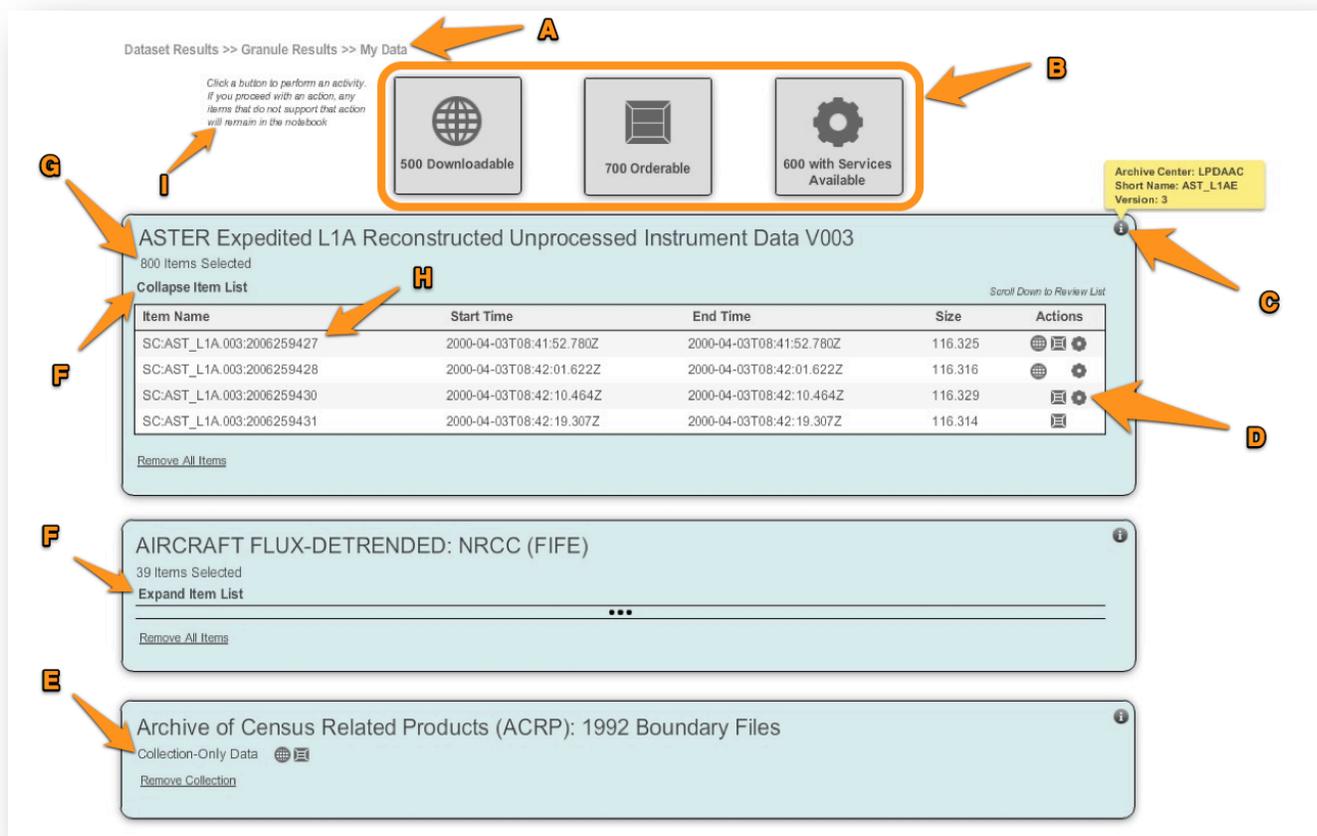


Figure 2 Annotated “My Data” Wireframe

Figure 2 Annotation	Description
A	In the existing shopping cart, breadcrumbs are used to guide the user through various parts of the ordering process. This will remain intact but under the new term “My Data”, and will allow the user to immediately return to the search result screens for both collections Data and granules.
B	<p>From these three buttons (or links) a user may see immediately how many items in “My Data” have the various capabilities. To progress to the next step in the ordering process, the user simply selects one of the three activities, which leads him to the next step of the ordering process.</p> <p>If any of these capabilities are not available to any items in “My Data”, the button will be disabled and the number of items available for that capability will be set to zero.</p>

C	Each item is broken down by parent collection (or stand alone collection as seen in the third grouping) and each grouping has an informational icon that a user can hover over (or click). This will reveal relevant information about that collection: archive center, short name and version id as a hovering note. The title for each collection grouping is the Dataset Id.
D	For individual granules being ordered in a collection, the user can see what options are available for that order. Simple icons will correspond to the activities presented in the boxes mentioned in annotation A, informing a user as to whether the granule is orderable, downloadable or has associated services. This is only visible if the list of granules is expanded (see annotation G) This provides specific and immediately visible information about which capabilities are available for each granule as requested in NCR 11013440
E	If a collection catalog item is included in the “My Data” area , the note will indicate that this is a collection and the icons for possible activities will be show to the right of this note. The collection shown in the screen shot may be ordered or downloaded via Reverb.
F	By default, only the collection groupings are shown in a compacted view. Screen controls allow for the expansion of this list to show all granules included in a scrollable list.
G	Each granule is identified by its Granule UR, as is the case in the current shopping cart implementation. This is only visible if the list of granules is expanded (see annotation G)
H	Each grouping is summarized by a note indicating the contents of that grouping. For example, this collection grouping contains 800 granules for ordering.
I	There are textual prompts available to guide users through the ordering process. This cue notifies the user that the next step in the workflow involves selecting an activity to perform and gives the user some guidance about what happens to data not included in any selected activity

Once a user has decided which capability he wished to access by clicking one of the buttons for downloading, ordering or servicing, he is taken to the next (and final) step of the work flow. This next screen allows the user to select options for the order, update his contact information and submit the order or request the download script/service invocation.

Submitting an Order

The wireframe below (Figure 3) represents the sample order screen for a guest user who is not logged in to Reverb. The groupings in this view are divided by collection and required options. If a collection has granules with differing option settings requirements, they will be displayed in separate groupings. As in the previous

“My Data” view, this view also includes an information icon in the upper right corner of the grouping to provide additional collection information if hovered over.

Note: The current implementation of the shopping cart allows each granule to be set with order options individually; this proposed workflow eliminates that capability in favor of a more simplistic interface.

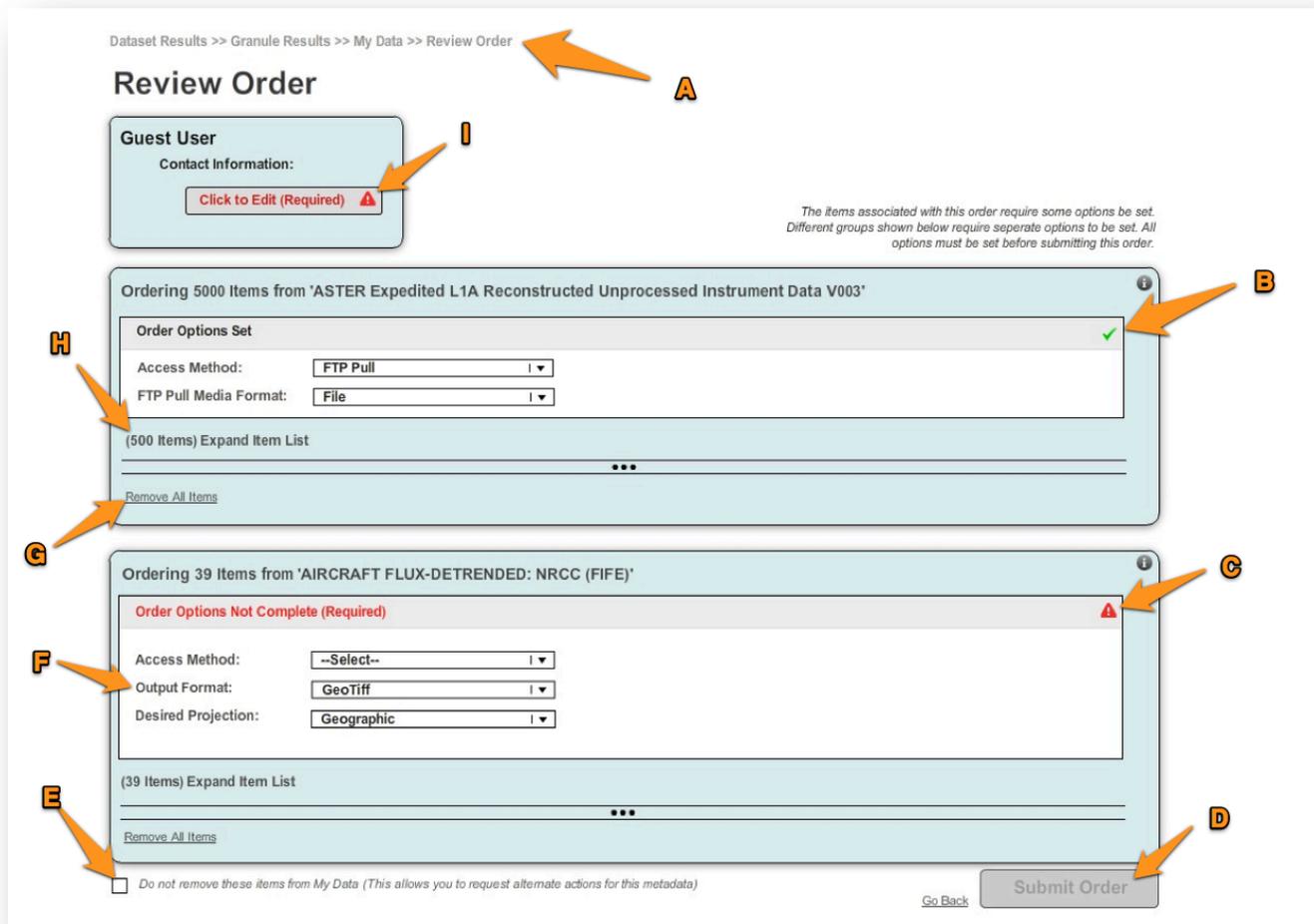


Figure 3 Order Submission Screen

Figure 3 Annotation	Description
A	Again the breadcrumbs give context for the entire discovery and ordering process. They also provide the ability to return to any point in the workflow.
B	The check icon is shown to assure a user that everything is ready for submission with respect to this set of order options.

C	If required form fields for an option set have not been filled out, an icon is displayed to indicate that this order is not ready for submission and that more information is required.
D	If any set of order options has not been specified or if the user contact information is incomplete, the submit button will not be active. Also note that the “Go Back” action is now a less prominent link. This allows for less confusion and accidental clicks.
E	As in the current order workflow, users are given the option of leaving these items in the “My Data” area after the order is submitted and now gives the user guidance about why they might want to choose this option.
F	Options are rendered on the screen rather than in a pop-over dialog. This gives users a quick view of what has been set and what still needs attention. This also addresses concerns raised by NCRs 11011983 and 11013220.
G	At this point in the order process, there is still the option of removing items from your request. These will remove these items from the “My Data” area as well.
H	As in the previous screen, users will be presented with a compact view of the data being ordered with the option of expanding the list to provide a scrollable list of granules.
I	<p>If a user is logged in to Reverb, his contact information, pulled from URS will be populated here. There will be a button allowing him to alter this information, but it does not need to be a separate screen in the workflow, as in the current version of the workflow.</p> <p>In the wireframe, the user ordering the data is a guest and doesn’t have any of the contact information required to place an order within Reverb so is presented with a button allowing them to complete this information. The information will be collected in a pop-over dialog overlaying the page.</p>

Handling Orders With Over 2000 Items

One of the most frequent support requests currently handled by the ECHO Operations team involves a user request more than 2000 items within a single order. While it is understood that there are limitations on the ordering systems that are intended to preserve performance, it makes sense to make some accommodations for these frequent user requests via Reverb itself. This change proposes a notification dialog that appears upon order submission. This notification informs the user that since his order is larger than 2000 items, it will be split by Reverb into multiple requests that fall within the 2000 item limit. A mock-up of this dialog is shown below.

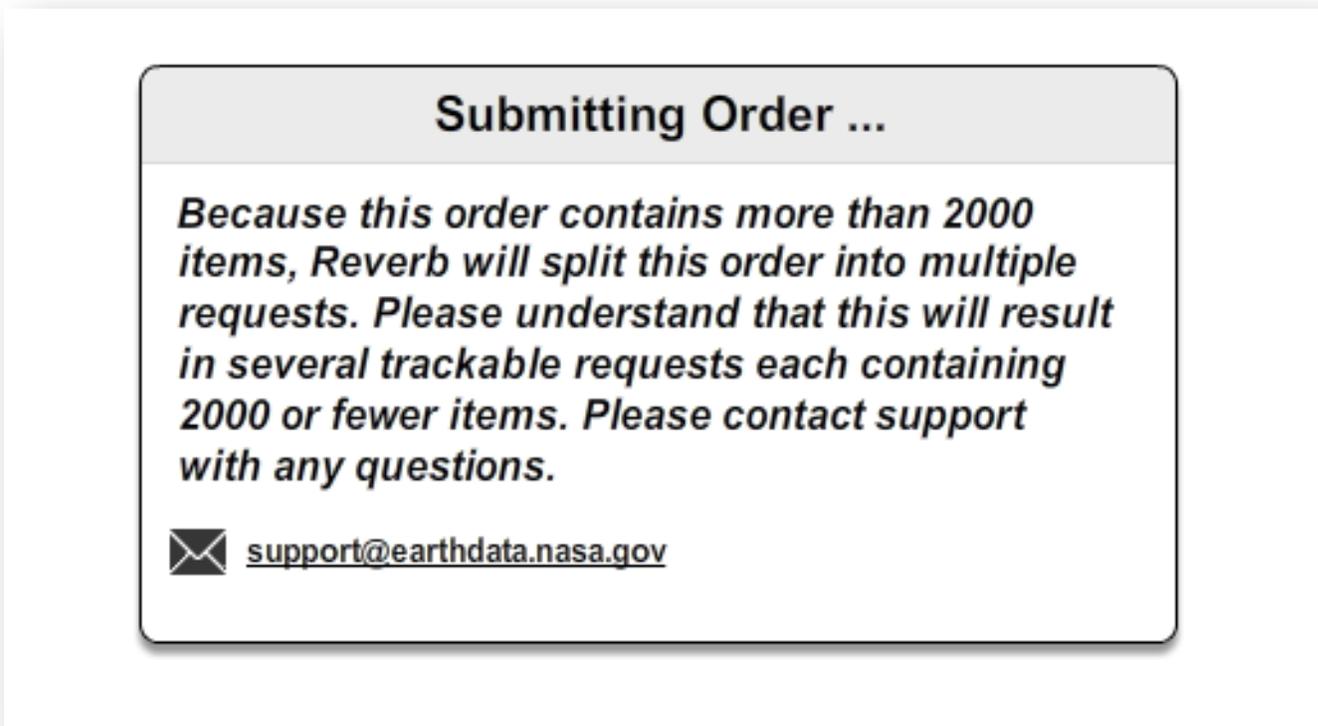


Figure 4 Split Order Notifications

Requesting Download Scripts

This wireframe shows the updated download request screen. The download screen remains largely unchanged, but there are some additional options and these options are no longer presented as a pop-over dialog but are an option screen in their own right.

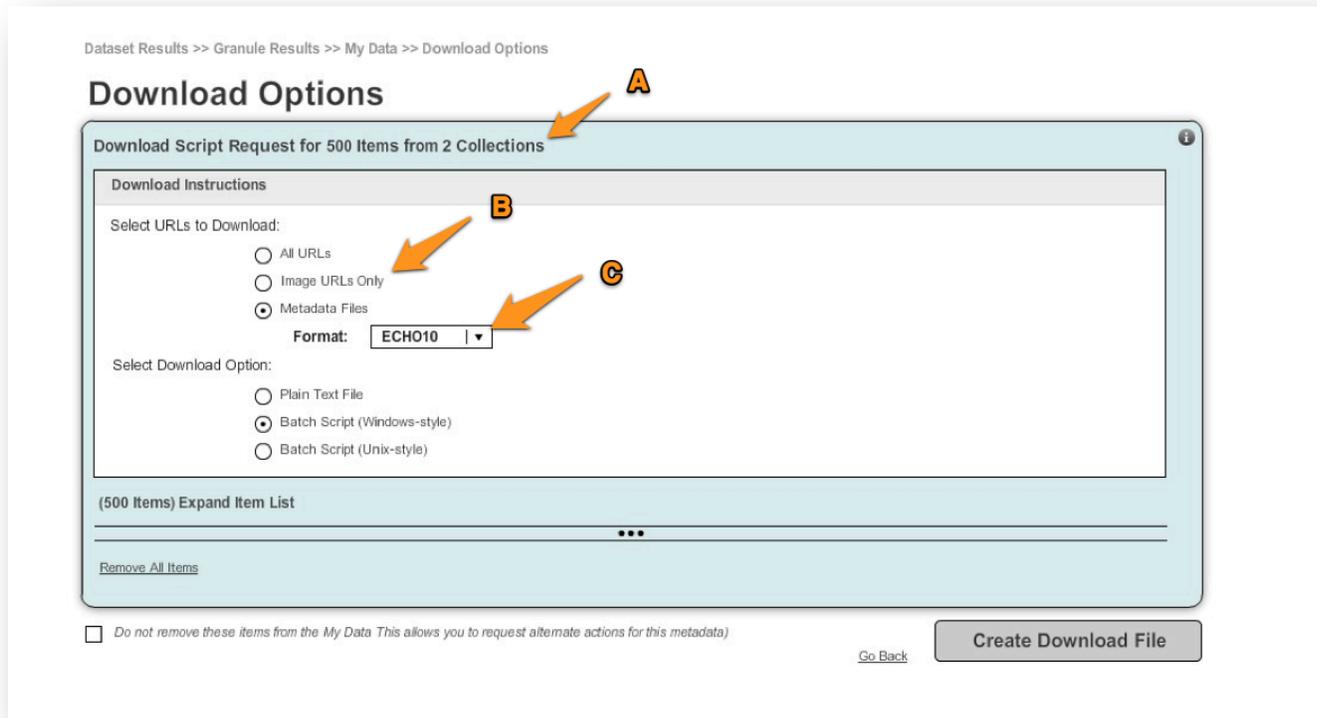


Figure 5 Download Options Wireframe

Figure 5 Annotation	Description
A	Reverb supports the creation of a single download script for items across multiple collections, so this screen is not split into groupings across multiple collections.
B	The addition of an “Image URLs Only” selection aids users interested in downloading only browse imagery.
C	The format option, “Native” by default, allows a user to choose the format of any downloaded metadata.

Submitting a Service Request

Finally, when a user decides to request services such as ESI for any of the items in his “My Data” area, upon clicking the services icon specified in annotation B of Figure 2, he will be taken to a screen that guides him through option selection for the requested services. The wireframe in Figure 4 depicts the option selection and submission page displayed.

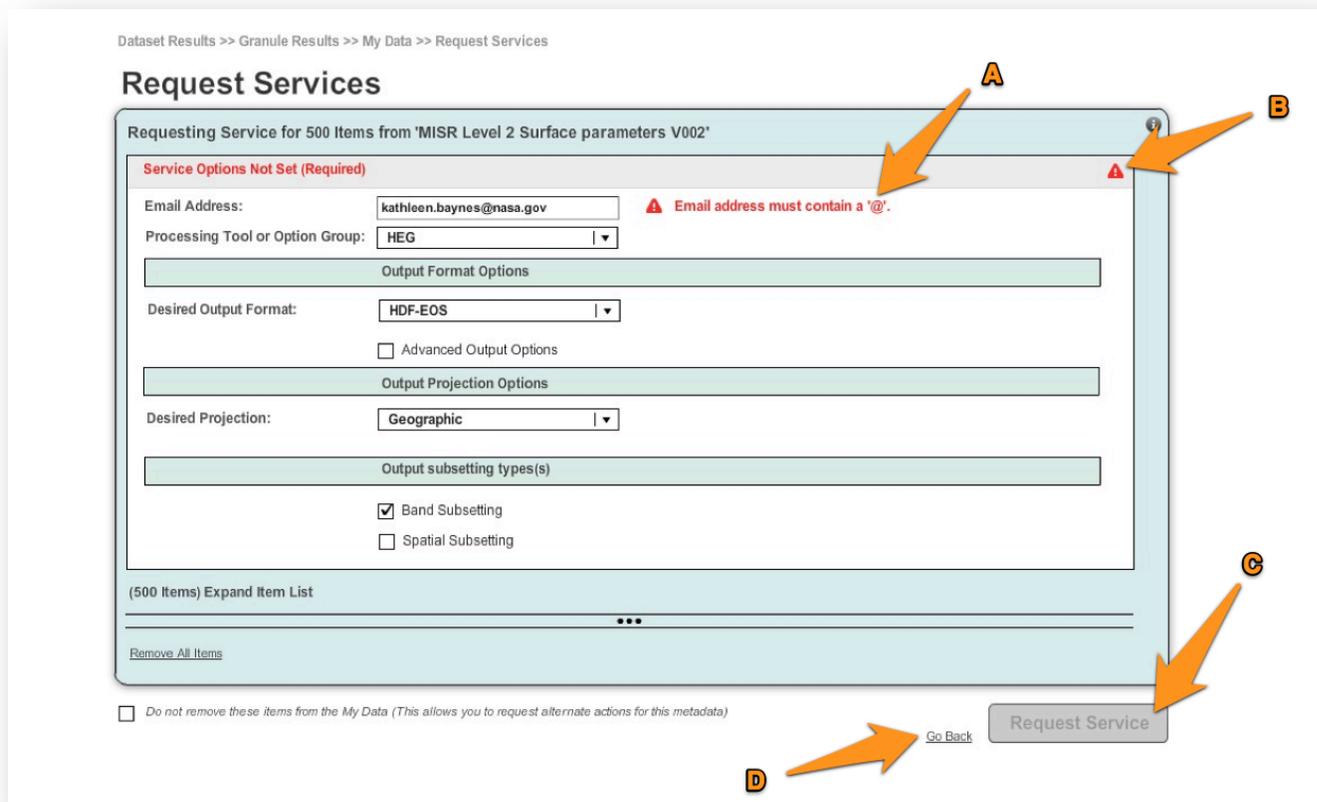


Figure 6 Service Submission Form

Figure 6 Annotation	Description
A	Options are displayed inline with the groupings. The option selections pane will expand as options change, just as in the dialog box pop-up in the current service workflow. In addition, field validation and requirement indicators are included.
B	If options aren't sufficiently set, an icon indicates this and prevents submission.
C	Just as in the order submission screen, if all options are not set as required, the service

	request cannot proceed.
D	All submission screens offer the option to go back before submitting the request. Again notice this option as been de-emphasized in the re-work.

4 Assumptions

This solution assumes the following technical capabilities exist either within Reverb or Reverb-accessible APIs:

1. Reverb can **retrieve** an option selection correlated to a specific granule at any point prior to submission in the service or order generation process.
2. Reverb (or ECHO) is able to **group** items at the collection level or by the order option and collection level for display to users.
3. Reverb can **modify** an option selection correlated to a specific granule at any point prior to submission in the service or order generation process.
4. Reverb can apply modifications to option selections for **all** relevant granules at any point prior to submission in the service or order generation process based on a change requested via a single granule’s option selection dialog.
5. Reverb can perform option selection modification in a reasonable amount of time for single or multiple granules.

5 Data Partner Impacts

These proposed changes should not impact data partners.

6 End-User and Client Impacts

Ultimately these proposed changes should have a positive impact on any Reverb end-user. This should make the order and service interfaces more straightforward and user friendly by allowing users to download individual item metadata directly from the information screen and streamlining the ordering process from start to finish. Because there are no changes to the ECHO API being proposed as a part of this work, any client developers utilizing ECHO APIs should not be impacted by these changes.

Date	Version	Brief Description
November 2012	1	Initial Internal Draft
January 2013	2	Incorporating Blink Usability Feedback

Table 1 Document Revision History