

NIH Electronic Multi-Project Applications

Reference for system-to-system solution providers

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Accepting Multi-Project Applications Electronically

The vast majority of competing grant applications to NIH are submitted electronically through Grants.gov. NIH's multi-project (also known as multi-component or complex) applications are the last to transition from a paper to electronic format and from the PHS 398 to the SF424 (R&R) data set.

Grants.gov's downloadable forms model is the primary submission method for single-project applications to NIH. However, a significant and growing population of applicants has moved away from form based submission in favor of system-to-system solutions. Our approach to transitioning to electronic submission of multi-project grant applications is flexible enough to accommodate the needs of all our applicants.

Grants.gov's downloadable forms model is simply not a good fit for large, highly collaborative, multi-project complex applications. To address the needs of applicants that currently rely on downloadable forms, NIH offers the ability to prepare multi-project applications and submit them through Grants.gov using a new web-based Application Submission System & Interface for Submission Tracking (ASSIST) service. In addition, system-to-system submission directly to Grants.gov is supported.

NIH Development Approach for Supporting Multi-project Applications

Although NIH manages both the pre-submission application preparation and submission through ASSIST and the agency processing post-submission, we have gone to great lengths to keep each side of the process autonomous.

In support of this approach we have:

- Defined schemas in conjunction with Grants.gov so that they meet NIH's requirements, but do not prohibit use by other agencies.
- Leveraged eRA Commons authentication/authorization for ASSIST while maintaining collection of Grants.gov Authorized Organization Representative (AOR) credentials for submission to Grants.gov

- Moved to certificate-based authentication for web services consistent with Grants.gov
 - Support: Comodo, DigiCert, Entrust, GoDaddy, Verisign, Thawte, Geo Trust
- Implemented [web services](#) that can be used by both the Web front-end and S2S service providers
- Used web services for the retrieval of agency data (grant history, person profile, organization profile) rather than direct access to NIH databases

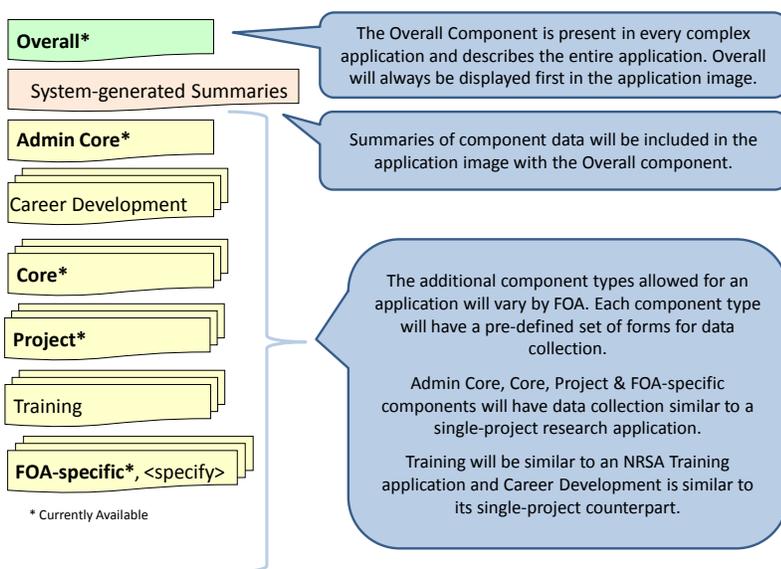
Defining a Consistent Multi-Project Application Package Format

While a paper process is very flexible in accommodating varying opportunity requirements, electronic processes require consistent, predictable application formats. NIH has defined a flexible application structure for all multi-project applications.

All electronic multi-project applications will include:

- **A single Overall Component:** The Overall component will have data collection comparable to a single-project application that describes the entire application and how each of the components fit together.
- **Additional Components:** Some number of additional component types with predefined data collection requirements. The types of additional components allowed can vary by opportunity. For example, some opportunities may allow career development or training components, while others may only focus on research type components (e.g., Admin Core, Project, Core, FOA-specific).
- **Summaries:** Information compiled from the data provided in the individual components (e.g., component and categorical roll-ups of budget data).

Figure 1: Application Format



When an FOA is posted in Grants.gov, agencies have the option of defining the kinds of components allowed, the forms used for each component type and the min/max number of times each component type can occur within the opportunity. NIH will also provide the ability to set a Research Strategy/Program Plan page limit for each component to facilitate systematic validations.

For example, a complex NIH FOA may specify:

Component Types	Research Strategy/Program Plan Page Limits	Occurrences (optional)	
		Min	Max
Component Types	Research Strategy /		
Overall	12	1	1
Admin Core	6	1	1
Research Core (FOA-specific)	12	1	Unlimited
Clinical Core (FOA-specific)	12	3	Unlimited
Service Core (FOA-specific)	6	0	3
Project	12	3	0

NIH will also maintain a way to control min/max iterations for a component type outside of the Grants.gov application package schema. Consequently, S2S solution providers should not rely on the Grants.gov schema to enforce min/max iteration values. Instead, S2S solution providers are encouraged to take advantage of our FOA Information Request within the Submission Agency Data Service which returns Component Labels and Component Iterations for a given FOA opportunity identifier. The web service request also provides Research Strategy page limit restrictions for each Component Label and is the best way to determine values for NIH business rule validations.

Forms/Data Set

The SF424 R&R dataset includes all the specific data items needed by NIH to support multi-project applications. However, some additional forms/form versions are needed to support multi-project applications.

In addition to the forms typically used for NIH single-project applications, the following forms are used:

- RR_SF424_Multi_Project_Cover_1_0
 - All fields optional in schema
 - Requirements controlled through agency validations
- RR_MP_Budget-V1_0 & RR_MP_SubawardBudget-V1.0
 - Allows up to 100 Sr/Key entries in Section A
 - Allows up to 100 Equipment items in Section C

For multi-project applications, a standard SF424 RR cover form will be used in the Overall component with all the standard requirements and validations. For other components, we only need a subset of the cover item fields and many of the required fields don't apply. The RR_SF424_Multi_Project_Cover_1_0 is a new, system-friendly implementation of the standard SF424 RR cover form in which all the fields are optional. This new form will only be used in multi-

component applications. If S2S systems populate more of the fields in the XML, we will simply disregard the extra data when we process the application and create the image.

The RR_MP_Budget-V1_0 and its companion subaward form will only be used in multi-component applications.

Component Form Templates

To help NIH staff in defining the data collection needed for each component, we have pre-defined a set of Component Types: Overall, Admin Core, Core, Project, Career Dev, and Training. In addition, staff can define and name a new 'FOA-specific' component types for a specific FOA. In most cases, the component templates used will include the forms designated in the table at:

http://grants.nih.gov/grants/ElectronicReceipt/files/Application_Forms_Activity_Code_Mapping.xlsx. However, NIH reserves the right to change the make-up of a template at any time.

We built ASSIST to determine the forms to 'present' to the user based on the Grants.gov schema rather than expecting specific forms in specific component types since multi-project FOAs will likely have exceptions and evolve over time. The same component type in two FOAs may have different forms. For example, the component type 'Project' may have the Cumulative Inclusion Enrollment Report and Planned Enrollment forms in one FOA, but not in another. We expect these differences to be more the exception than the rule, but S2S solution providers are encouraged to design their systems to be flexible in this area.

Important note: The Grants.gov dynamic multi-project opportunity schemas require components to be in the XML in the order specified by the schema.

NIH Grant Images

NIH uses style sheets for all multi-project and most single-project application images.

Application Image Notes

- As with single-project electronic application processing, the system will automatically assemble a single application image from the submission with a table of contents, summaries, components, bookmarks, headers, footers, page numbers, etc.
- Cover Letter and Appendix material for each component will be separately accessible and not included in the main grant application image.
- eRA systems will group all components of the same type together in the image. For example, if an FOA allows components of type 'Project', then all 'Project' components included in the application will appear together.
- The image will display the Overall component first, followed by system-generated summaries, and then the additional component types in alphabetical order. For FOA-specific components, the component type name will be used when alphabetizing components and thus setting the order that they will appear in the image. The components of the same type will be displayed in the order in which they were created in ASSIST or included in the submitted XML.
- Summaries compiled from component data will be included for:

- Components

- Project Performance Sites
- Human Subjects, Clinical Trial, HESC, and Vertebrate Animal information
- Budget Information
- Sr/Key personnel
 - PD/PIs for the entire application are listed first followed by all other Senior/Key personnel in alphabetical order. Biosketches follow the list of personnel in the same order and are not repeated within the individual components.

Additional information regarding multi-project application images can be found at:

http://grants.nih.gov/grants/ElectronicReceipt/files/Electronic_Multi-project_Application_Image_Assembly.pdf.

Application Guide Instructions

It is critical that applicants follow the instructions in the [SF424 \(R&R\) Application Guide](#), except where instructed in this funding opportunity announcement to do otherwise and where instructions in the Application Guide are directly related to the Grants.gov downloadable forms currently used with most NIH opportunities.

S2S solution providers are encouraged to review Section 9 – Supplemental Instructions to the SF 424 (R&R) for Preparing a Multi-Project Application of the Application Guide SF424 (R&R) – Forms Version C found at

<http://grants.nih.gov/grants/funding/424/index.htm> .