



Interface Control Document (ICD) PPM Version 2.0

<Project or System Name>

U.S. Department of Housing and Urban Development

<Month Year>



Document History

<Provide information on how the development and distribution of the Interface Control document is controlled and tracked. Use the table below to provide the version number, date, author, and a brief description of the reason for creating the revised version.>

Version No.	Date	Author	Revision Description



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1. System Identification

<In the sub-sections below, provide a full identification of the systems participating in the interface, the contractors who are developing the systems, the interfacing entities, and the interfaces to which this document applies, including, as applicable, identification numbers(s), title(s), abbreviation(s), version number(s), release number(s), or any lower level version descriptors used.

Use a separate sub-section for each system that participates in the interface. Create additional sub-sections, if necessary.>

1.1 <System 1>

<Provide sufficiently detailed information as specified above to identify a system participating in the interface.>

1.2 <System 2>

<Provide sufficiently detailed information as specified above to identify a system participating in the interface.>

2. Interface Description

2.1 System Overview

<Illustrate the interface and the data exchanged between the interfaces. Provide further information on the functionality and architecture of the participating systems in the subsequent sections. In particular, summarize each system with special emphasis on the functionality related to the interface.>

2.2 Interface Overview

<Describe the functionality and architecture of the interfacing system as it relates to the proposed interface. Briefly summarize the system, placing special emphasis on functionality, including identification of key hardware and software components, as they relate to the interface. If more than one external system is to be part of the interface being defined, then include additional sections at this level for each additional external system.>

2.3 Functional Allocation

<Describe how the end users will interact with the interface being defined. If the end user does not interact directly with the interface being defined, describe the events that trigger the movement of information using the interface being defined.>

2.4 Data Transfer

<Briefly describe how data will be moved among component systems of the interface being defined. Include descriptions and diagrams of how connectivity among the systems will be implemented and of the type of messaging or packaging of data that will be used to transfer data among the systems. If more



than one interface between these two systems is defined by this ICD, identify each in this section. Include a separate subsection (3.4.1, 3.4.2 etc.) for each interface.>

2.5 Transactions

<Briefly describe the types of transactions that will be utilized to move data among the component systems of the interface being defined. If multiple types of transactions will be utilized for different portions of the interface, a separate section may be included for each interface.>

2.6 Security and Integrity

<If the interface defined has security and integrity requirements, briefly describe how access security will be implemented and how data transmission security will be implemented for the interface being defined. Include a description of the transmission medium to be used and whether it is a public or a secure line. Include a brief description of how data will be protected during transmission and how data integrity will be guaranteed. Include a description of how the two systems can be certain that they are communicating with each other and not with another system masquerading as one of them. Describe how an individual on one system can be audited and held accountable for resulting actions on the other component of the interface.

An interface that is completely self-contained, such as movement of data between systems resident in the same computer room, may not have any security requirements. In this case, state this with an explanation of why the interface has no security and integrity requirements.>



3. Detailed Interface Requirements

<Specify the requirements for one or more interfaces between two systems. Include explicit definitions of the content and format of every message or file that may pass between the two systems and the conditions under which each message or file is to be sent. If an interface between the two systems is to be implemented incrementally, identify the implementation phase in which each message will be available.

Note: The specific interface definition should include only subsections relevant to the interface being defined and considerable liberty may be taken in the organization of Section 4.1 subsections. Where types of information not specified in Section 4.1 are required to clearly define the interface, additional subsections should be added. Where appropriate, reference other readily available documents (such as data dictionaries, standards for communication protocols, and standards for user interfaces) instead of stating the information here. It may be useful to include copies of such documents as attachments to the ICD. Where possible, the use of tables and figures is encouraged to enhance the understandability of the interface definition. In defining interface requirements, clearly state which of the interfacing systems the requirement is being imposed upon.

For ease of updates and understanding systems with multiple interfaces, this section may be included as an appendix to the ICD rather than as a section of the ICD.>

3.1 <Interface 1> Requirements

<Briefly summarize the interface. Indicate what data protocol, communication methods and processing priority are used by the interface. Data protocols used may include messages and custom ASCII files. Communication methods may include electronic networks or magnetic media. Indicate processing priority if information is required to be formatted and communicated as the data is created, as a batch of data is created by operator action, or in accordance with some periodic schedule. Include requirements for specific messages or files to be delivered within a set interval of time in Paragraphs 4.1.1 or 4.1.2.>

3.1.1 #Interface Processing Time Requirements

<If information is required to be formatted and communicated as the data is created, as a batch of data is created by operator action, or in accordance with some periodic schedule, indicate processing priority. Requirements for specific messages or files to be delivered to the communication medium within a set interval of time should be included in Subsection 4.1.2. State the priority that the interfacing entities must assign to the interface. Priority may be stated as performance or response time requirements defining how quickly incoming traffic or data requests must be processed by the interfacing system to meet the requirements of the interface. Considerable latitude should be given in defining performance requirements to account for differences in hardware and transaction volumes at different installation sites of the interfacing systems.>

3.1.2 Message (or File) Requirements

<Specify the requirements for one or more interfaces between two systems. Include explicit definitions of and the conditions under which each message is to be sent. Describe the definition, characteristics, and attributes of the command.



Data Assembly Characteristics

<Use the following paragraphs to define the content and format of every message, file, or other data element assembly (records, arrays, displays, reports, etc.) specified in paragraph 4.1.2. In defining interfaces where data is moved among systems, define the packaging of data to be utilized. The origin, structure, and processing of such packets will be dependent on the techniques used to implement the interface. Define required characteristics of data element assemblies that the interfacing entities must provide, store, send, access, receive, etc.

When relevant to the packaging technique used, provide the following information:

- *Names/identifiers*
- *Project-unique identifier*
- *Non-technical (natural language) name*
- *Technical name (e.g., record or data structure name in code or database)*
- *Abbreviations or synonymous names*
- *Structure of data element assembly*
- *Visual and auditory characteristics of displays and other outputs (such as colors, layouts, fonts, icons and other display elements, beeps, lights) where relevant*
- *Relationships among different types of data element assemblies used for the interface*
- *Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the assembly may be updated and whether business rules apply*
- *Sources (setting/sending entities) and recipients (using/receiving entities)>*

Field/Element Definition

<Define the characteristics of individual data elements that comprise the data packets defined in the above section (Data Assembly Characteristics). Data Assembly Characteristics and Field/Element Definition may be combined into one section in which the data packets and their component data elements are defined in a single table. Include only features relevant to the interface being defined and consider such features as:

- *Names/identifiers*
- *Project-unique identifier*
- *Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the data element may be updated and whether business rules apply*
- *HUD standard data element name*
 - *Non-technical (natural-language) name*
 - *Technical name (e.g. variable or field name in code or database)*
 - *Abbreviation or synonymous names*
 - *Data type (alphanumeric, integer, etc.)*



- *Size and format (such as length and punctuation of a character string)*
- *Units of measurement (such as meters, dollars, nanoseconds)*
- *Range or enumeration of possible values (such as 0-99)*
- *Accuracy (how correct) and precision (number of significant digits)*
- *Security and privacy constraints*
- *Sources (setting/sending entities) and recipients (using/receiving entities)*

3.1.3 Communication Methods

<Communication requirements include all aspects of the presentation, session, network and data layers of the communication stack to which both systems participating in the interface must conform. Include the following subsections in this discussion and supplement with additional information as appropriate.>

Interface Initiation

<Define the sequence of events by which the connections between the participating systems will be initiated. Include the minimum and maximum number of conceptions that may be supported by the interface. Also include availability requirements for the interface (e.g., 24 hours a day, 7 days a week) that are dependent on the interfacing systems. Availability requirements beyond the control of the interfacing systems, such as network availability, are beyond the scope of an ICD.>

Flow Control

<Specify the sequence numbering, legality checks, error control and recovery procedures that will be used to manage the interface. Include any acknowledgment (ACK/NAK) messages related to these procedures.>

3.1.4 Security Requirements

<Specify the security features that are required to be implemented within the message or file structure or in the communications processes. Describe the security of the communication methods used (include safety/security/privacy considerations, such as encryption, user authentication, compartmentalization, and auditing). For interactive interfaces, security features may include identification, authentication, encryption and auditing. Simple message broadcast or ASCII file transfer interfaces are likely to rely on features provided by communication services. Do not specify the requirements for features that are not provided by the systems to which the ICD applies. If the interface relies solely on physical security, document the interface security. If the systems interface relies on the security of the networks and firewalls through which the systems are connected, state here.>

3.1.5 Physical Requirements

<Specify the physical requirements of the interfacing system. If an interface has no physical requirements, then state here.>

3.2 <Interface 2> Requirements

<When more than one interface between two systems is being defined in a single ICD, define each separately, including all of the characteristics described in Section 4.1. There is no limit on the number of



unique interfaces that can be defined in a single Interface Control Document. In general, all interfaces defined should involve the same two systems.>



4. Qualification Methods

<Define a set of qualification methods to be used to verify that the requirements for the interfaces defined in Section 4 have been met. Qualification methods include:

- **Demonstration** - *The operation of interfacing entities that relies on observable functional operation not requiring the use of instrumentation, special test equipment, or subsequent analysis*
- **Test** - *The operation of interfacing entities using instrumentation or special test equipment to collect data for later analysis*
- **Analysis** - *The processing of accumulated data obtained from other qualification methods. Examples are reduction, interpretation, or extrapolation of test results*
- **Inspection** - *The visual examination of interfacing entities, documentation, etc.*
- **Special qualification methods** - *Any special qualification methods for the interfacing entities, such as special tools, techniques, procedures, facilities, and acceptance limits>*



Appendix A: Interface Controls

[Include a detailed description of the required interface controls.]

Interface Type	Interface From...	Interface To...	Description	Other Information
OSI Application Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
OSI Presentation Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
OSI Session Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
OSI Transport Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
OSI Network Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
OSI Data Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>



Interface Type	Interface From...	Interface To...	Description	Other Information
OSI Physical Layer				
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>
<interface type>	<interface from>	<interface to>	<enter description of interface>	<other supporting information>

Table 1 - Appendix A: Description of Required Interface Controls



Appendix B: References

Table 2 below summarizes the documents referenced in this document.

Document Name and Version	Description	Location
<Document name and version number>	[Provide description of the document]	<URL or Network path where document is located>

Table 2 - Appendix B: References



Appendix C: Key Terms

Table 3 below provides definitions and explanations for terms and acronyms relevant to the content presented within this document.

Term	Definition
<i>[Insert Term]</i>	<i><Provide definition of term and acronyms used in this document></i>

Table 3 - Appendix C: Key Terms



Appendix D: Information Exchange Matrix

Table 2 below summarizes the Information Exchange Matrix

Process	Sub-Process	Information Exchanges	Data Objects								
Process Application	Validate Applicant Capacity	Validate Applicant CCR	Applicant			Project Participant			Applicant Certifications		
		Establish Applicant Organizational Resources	DUNS Number	Type Project	Legal Name	External Entity ID	Type Code	Project ID	Applicant DUNX Number	Certification RCEZED	Certification Date
		Verify Applicant Certifications	X	X	X						
		Verify Applicant Funding Resources	X	X		X	X	X			
		Establish Applicant Project Participants	X	X					X	X	X
		Identify Applicant Previous Projects									
		Determine Applicant Funding Allocation Status and History									
		Associate Applicant with Congressional Representation									

Appendix E: Context Flow Diagram describes the number data flows#

