

***NASA Personnel Payroll System
(NPPS)/TechTracS Interface
Definition Agreement***

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National Aeronautics and
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Marshall Space Flight Center
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NASA Personnel Payroll System (NPPS)
/
TechTracS System
Interface Definition Agreement

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NASA Personnel & Payroll System (NPPS)/TechTracS Interface Definition Agreement

1.0 Introduction

This Interface Definition Agreement (IDA) establishes the specifications for an interface between the NASA Personnel Payroll System (NPPS) and the TechTracS system. This interface supports the Inventions and Contributions Board (ICB) award process by importing current and former NASA employees' ICB Award data into NPPS as specified in Appendix A.

2.0 Purpose

The purpose of this interface agreement is to describe the dialog and data transferred between NPPS and TechTracS. This agreement also defines the specific technical requirements for integration, data element definition, functional execution, and error handling routines. The document will be updated and reviewed as part of standard Configuration management procedures.

3.0 Roles and Responsibilities

This section outlines at a high level the responsibilities that the Information Services Department (ISD) Sustaining Engineering Support for Agency wide Administrative Systems (SESAAS) Team, the TechTracS Support Team, and the NPPS Operational Support Team are accountable for in developing and maintaining this interface. These roles and responsibilities include:

SESAAS will be responsible for:

- The mainframe software application and documentation required to read the TechTracS data, further manipulate the data, and load the ICB award data into the NPPS Personnel Action Interface File.
- Physical configuration management control over this IDA.

TechTracS Support will be responsible for:

- Software and documentation required to extract the employee information from the TechTracS database identified in Appendix A, and provide the data to NPPS via an interim server.
- TechTracS operation support.

NPPS Operational Support Team will be responsible for:

- Coordinating and executing the bi-weekly job stream(s) necessary to import the incoming TechTracS interface files.
- Transferring/uploading the file to the transient storage pool.
- Executing the job to manipulate the data and load the ICB award data into the NPPS Personnel Action Interface File.

The Organizations listed above will approve this IDA in its final form, and these Teams will be available to answer questions and resolve interface issues concerning this IDA. All changes to the final form of this IDA will be documented in the Document Change Record.

4.0 Interface Details

This section outlines the scenarios that occur as a result of the NPPS and TechTracS interfaces and the overall mechanisms; error handling, file format, and exchange model.

4.1 Scenario TechTracS to NPPS

This scenario represents an (Inventions and Contributions Board (ICB)) award action, and subsequent approval by the authorized approver of the award. The TechTracS System will collect the employee data (as identified in Appendix A) for each current and former NASA employee receiving an ICB award that has been approved, and send the file to NPPS on a biweekly basis.

4.2 Scenario Load of TechTracS Data to NPPS

The ICB award data sent to the mainframe will be loaded to the NPPS Personnel Actions Interface file for subsequent validation and processing.

Figure 1 depicts the data exchanges in the NPPS/TechTracS interface process.

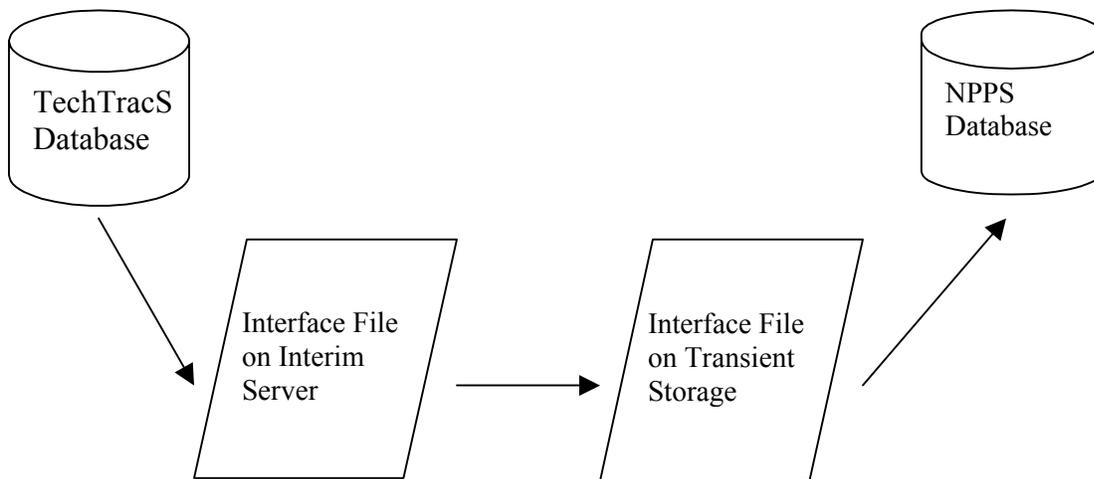


Figure 1. TechTracS to NPPS data exchange.

4.3 Mechanism

NPPS is a mainframe application that was written using the NATURAL programming language. This application runs against the ADABAS database management system (DBMS).

TechTracS is a client server database application written using 4th Dimension, running on Macintosh and PC installations.

The mechanism for completing the interface requirements will be as follows:

- TechTracS will send a file on a bi-weekly basis to an interim server. Approved ICB award data for all centers will be extracted and sent at one time.
- An automated bi-weekly NPPS job will read the TechTracS interface file, and populate the NPPS Personnel Actions Interface file.

4.4 Error Handling

The NPPS Operational Support Team and the TechTracS Support Group will be responsible for resolving any data exchange errors or exceptions. Errors involving the data contents of the interface files will be handled with cooperation between SESAAS and the TechTracS Support Group.

4.5 Security

The data file being interfaced contains data that are subject to the Privacy Act, and its transfer must be secure. Because NPPS has access to the Mainframe Transient Storage Area via its mainframe logical partition (LPAR), this storage area is suitable as a staging area for import and export files.

4.6 File Format

The TechTracS/NPPS interface file and record format are defined in Appendix A. General formatting standards or criteria used for this interface file will be as follows:

- A column-oriented, fixed record length, ASCII character flat file
- Character fields will be left justified and space filled to the right
- Numeric fields will be right justified and space filled to the left. If decimal data is present, an implied decimal will be inserted in the appropriate place, as shown in Appendix A.
- Unpopulated data items will be space filled
- The ASCII carriage return will be used to mark the end of a record.

4.7 Exchange Model

The *exchange model* is defined as the set of data exchanged between applications, the business rule directing the behavior of the data, and the metadata that describes the interface touch points. The exchange model documents, for each interface touch point, the source (originating) application and the target (data recipient) application. The metadata provides information describing the functional and technical areas of the interface. The specifics of the exchange model are included in Appendix B.

Appendix A – TechTracS to NPPS Interface

TechTracS Selection Criteria: Only current NASA and former NASA employees’ data with approved ICB awards will be loaded into the flat file.

NASA/Former NASA Employee ICB Award Record						
Field NO.	Element Name	Description	Lgth	Col	NPPS File NPPS Field (Format)	COMMENTS
1	Center	Center Installation	4	1-4	NPS2-PERACT-INT.INT-INSTALL	Valid Center Value See Table of NPPS Codes below
2	SSN	Social Security Number	9	5-13	NPS2-PERACT-INT.INT-SSN	Numeric data
3	Approval Date	Date the award was approved	8	14-21	NPS2-PERACT-INT.INT-EFDATE and NPS2-PERACT-INT.INT-APPROVALDTE	Must be in format YYYYMMDD
4	Award Amount	Amount of Award	7	22-28	NPS2-PERACT-INT.INT-AWDAMT	2 Decimal places are implied.
5	Award Year	Fiscal Year of Award Given to Employee	2	29-30	NPS2-PERACT-INT.INT-AWDYR	Must be in format YY
6	Award Tracking Number	Tracking Number assigned to award when it was approved	16	31-46	NPS2-PERACT-INT.INT-AWARD-GROUP-TEXT	Freeform text field

Field 1. Center – Valid Center Values.

Center Abbrev	NPPS Code	Center Description
HQ	1000	Headquarters
ARC	2100	Ames Research Center
GRC	2200	Glenn Research Center
LARC	2300	Langley Research Center
DRC	2400	Dryden Flight Research Center
GSFC	5100	Goddard Space Flight Center
MSFC	6200	Marshall Space Flight Center
SSC	6400	Stennis Space Center
JSC	7200	Johnson Space Center
KSC	7600	Kennedy Space Center

Appendix B – Exchange Model

Metadata Property	Description
<p>Business Event (Trigger) The <i>business event</i> is the activity to which the business process must respond. This should include a description of process-mapping number, what the <i>event</i> is, and who initiates it.</p>	<p>Scheduled bi-weekly extract and transmission of the interface file to NPPS. The data will be validated, and manipulated for processing/loading into the NPPS Personnel Action Interface File. The purpose for the interface is to obtain the current NASA/Former NASA employee approved ICB awards. The scheduled bi-weekly extract and transmission of the interface is triggered by TechTracS. The scheduled bi-weekly load of the incoming interface file to NPPS is triggered by NPPS.</p>
<p>Source Application(s) References the application(s) name(s) that initiates the action that occurs between one or more target applications. This action may be a request for information from other applications or may be the initiator of a data exchange with other applications based on the business event.</p>	<p>Extract/Transmit TechTracS ICB Awards: TechTracS script/program</p>
<p>Target Application(s) References the application(s) name(s) that responds to the action requested by the source application(s). This action may be a response to an information request from other applications or may be the recipient of a data exchange from other source applications based on the business event.</p>	<p>Validation/Load to NPPS: NPPS Script/Program</p>
<p>Data Attributes References the application(s) name(s) that responds to the action requested by the source application(s). This action may be a response to an information request from other applications or may be the recipient of a data exchange from other source applications based on the business event.</p>	<p>See Appendix A</p>
<p>Data Transformation / Crosswalks Data transformation focuses on the physical structure of the data attributes as they originate from the source application. It must be determined if there is a required crosswalk to handle the act of transforming the data attributes to the physical structure of the receiving data attributes as they reside in the target application(s).</p>	<p>See Appendix A</p>
<p>Interface Category (Internal or external to the software system i.e. ERP, NPPS, MARTS)</p>	<p>External</p>
<p>Interface Description Provide description of the activity that is occurring and requires a touch point with one or more applications. This activity may be a request or response for information or it may denote how the information will be exchanged, such as to publish or subscribe.</p>	<p>An extract of information from TechTracS on a bi-weekly basis via a scheduled batch job will occur. The extract file will be transmitted to the NPPS production server for processing. After NPPS processes the TechTracS interface file, the data will be loaded into the NPPS Personnel Actions Interface File.</p>

NPPS / TechTracS IDA

Metadata Property	Description
<p>Expected Duration for use of the interface Based on the IFMP schedule for module implementations, a timeframe for the expected duration for use of the interface can be determined.</p>	For the life of NPPS or TechTracS.
<p>Integration Options</p>	N/A
<p>Type of Interface The <i>type of interface</i> relates to the behavior of the exchanged data. It identifies that when the target application(s) receives the data how it will be used (Create, Read, Update, or Delete).</p>	Create the ICB Award record(s) and calculate pay based on employee payroll parameters within NPPS.
<p>Data Persistence Persistence refers to how application data is stored, such as database, tape, flat file, etc.</p>	Adabas file
<p>Application Programming Language (Processing Technology) Identifies the <i>programming language</i> used to develop the application. Examples include COBOL, FORTRAN, Natural, Visual Basic, etc.</p>	Source: 4 th Dimension Target: Adabas/Natural
<p>Hardware Platform Identifies the hardware platform where the application resides, such as IBM 390, HP9000.</p>	TechTracS: Macintosh/PC Installation NPPS : IBM <u>9672 Mainframe</u>
<p>Operating System Identifies the operating system that is used on the hardware platform where the application resides, such as UNIX, AS400, etc.</p>	TechTracS : Macintosh/Windows NPPS: <u>IBM OS/390 version 4</u>
<p>Communication Protocol Identifies the communication protocol that is used for communication by the hardware platform where the application resides, such as FTP, DNS, SNMP, TCP/IP, Novell NetWare, etc.</p>	Secure File Transfer Protocol (SFTP)
<p>Server Address The specific address for the hardware platform where the application resides.</p>	*****
<p>Velocity Identifies the execution method for the touch point transaction processing, such as, real-time or batch.</p>	Batch
<p>Error Handling / Failure Notification Procedure / Rollback Identifies the approach for error handling, such as <ul style="list-style-type: none"> - If the transaction fails, does it perform a back out of in-process transactions? - Are there forward recovery procedures and what are they? - Does the database do a rollback if the transaction fails to complete? How is a restart handled if the transaction fails?</p>	The NPPS/TechTracS error handling details are as follows: <ul style="list-style-type: none"> • Automated or manual notification of error by discovering party. • Appropriate data owners will resolve any exceptions. Restarts will be handled by the NPPS Operational Support Team.
<p>Modification / Customization needed</p>	N/A
<p>Upgrade Implications on Source or Target</p>	N/A