Handshakes 2-4

Presented by:
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The term **handshake** (HS) is used to describe the electronic exchange of data between business systems.

Sometimes source and target business systems use an intermediary service, commonly referred to as a **“Value Added Network”** (VAN), to perform translations, validations (data integrity checks), secure routing, monitoring, and other services.

DoD requires the exchange of **standard data** (e.g., PDS and SFIS).
Interface Environment

**Current Interface Environment**
- NAVY
- ARMY
- DoD Wide
- DAs
- USAF
- External

**Target Interface Environment**
- GEX: Data Routing and Delivery Across Systems
- Data Transformation To/From Standards and Unique Formats
- Business Activity Monitoring

Point-to-Point “Spaghetti” – Expensive, Impossible to Manage or Standardize

Hub and Spoke – Cheaper, Easy to Standardize and Manage, More Scalable, Improved Internal Controls

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Handshake 1: “Create Purchase Request” – The development and receipt of an appropriately formatted, set of Purchase Request (PR) data by the contract writing system. This process includes the performance of a commitment and certification of funds against a PR in the accounting system.

Handshake 2: “Pre-Award Funds Validation” - The execution of a pre-award funds validation or “funds-check” in order to ensure that funds committed at Handshake 1 remain unchanged and certifiable.

Handshake 3: “Record Award to Accounting System(s)” - The automated electronic recording of the obligation, including the full set of contract data required to facilitate traceability, in the accounting system at time of contract award or funded modification.

Handshake 4: “Record Award to Entitlement System(s)” - The automated electronic recording of the contract in the entitlement system at time of contract award or funded modification is critical to successful contract administration.

Handshake 5: “Confirm Receipt and Acceptance” - The confirming of receipt and acceptance of goods or services, aligned with a specific award, to the Government to facilitate entitlement.

Handshake 6: “Perform Entitlement” – “Match request for payment to supporting documentation, such as obligation and receiving report, to support two or three-way matching. Also includes payment prevalidation.”

Handshake 7: “Pay the Vendor” - Payment systems receive accurate accounting and entitlement data, which is then used to make timely and accurate payments to vendors. Also includes reporting payment data to accounting to record expenditure.

Handshake 8: “Report Payments to Treasury” - DoD financial systems provide complete and accurate payment data to the US Treasury in accordance with Federal standards.

Handshake 9: “Perform Contract Closeout” - Completed/terminated contracts are closed in DoD acquisition and financial systems, and remaining funds are de-obligated.
HS2 Pre-Award Funds Validation

• The execution of a pre-award funds validation or “funds-check” in order to ensure that funds committed at Handshake 1 remain unchanged and certifiable.

• The HS2 SOP was published 20 Mar 2019 under a cover memo jointly signed by DCFO and DPC
  – Signed cover memo and SOP available at:
    • https://www.acq.osd.mil/dpap/pdi/p2p/handshake_2_pre-award_funds_validation.html

• DoD FMR and DFARS requirement
HS2 Accounting Talkback

- HS2 Accounting Talkback and Purple Error Codes
  - Process where CWS sends draft award, via GEX, to applicable accounting systems for funds check, and receiving a consolidated response with any applicable errors.
  - The Accounting Talkback and Purple Error Codes are available at (expand the P2P and HS2 sections):

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CWS sends PDS file in “Funds Certification” status to GEX for validation. PDS Validation Response file is returned to the CWS.

GEX correlates all matching HS2 Talkback files, and aggregates the responses into a single PDS Val Response file. That file is sent to the CWS.

PDS file with awardee data removed is sent to each downstream accounting system identified by an active AAI on the document.

Acct. Systems send HS2 Talkback file to GEX for validation. HS2 Talkback Validation Response file is returned to the Acct. System.
### Talkback Purple Error Codes

The purple (DoD standard) error codes consist of data errors, business rule errors, and other technical errors.
HS2 SOP – Highlights

• Implementation Deadline
• Applicability
• Waivers / Exceptions
• Accounting Activity Responsibilities
• Deobligations
• Implementation / Performance Metrics
Early Adopter(s)

- Contract Writing System: Standard Procurement System (SPS)
- Accounting System: Defense Agency Initiative (DAI)
- Status
  - DAI experienced a pause to support another priority, but recently (March 2019) re-engaged
  - Draft Integrated Master Schedule under development
  - Washington Headquarters Services (WHS) agreed to service as DAI pilot agency (also pending response of an additional pilot agency)
  - A necessary Oracle patch in support of HS2 has been completed and initial testing passed
  - DAI currently working on functional design and mapping of DAI error codes to HS2 ‘purple’ error codes (results used to update response schema)
  - HS2 tentatively planned for July 2019 release (SCR90(HS2))

Other Interested Parties (Army, Air Force, and US Marine Corps)
### IMPLEMENTATION METRICS

<table>
<thead>
<tr>
<th>Accounting System</th>
<th>General</th>
<th>Automation Implemented</th>
<th>Development &amp; Implementation (if not automated)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source Contract Writing System</td>
<td>Source Contract Writing System File Format</td>
<td>File Format Consumed by Accounting System</td>
</tr>
<tr>
<td>Acct Sys A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acct Sys B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acct Sys C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PERFORMANCE METRICS

<table>
<thead>
<tr>
<th>Accounting System</th>
<th>General</th>
<th>Volume of Draft Contract Awards &amp; Mods</th>
<th>Tailback Aggregation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source Contract Writing System</td>
<td>Source Contract Writing System File Format</td>
<td>Intermediary Systems (e.g., GEX)</td>
</tr>
<tr>
<td>Acct Sys A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acct Sys B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acct Sys C</td>
<td></td>
<td></td>
<td></td>
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P2P HS 3 & 4

- Benefits: Implementing the standard electronic procedures between Contract Writing, Accounting, and Entitlement systems (Handshakes 3 and 4) across the Department will improve data quality, reliability, auditability, and overall reduces inefficiencies related to P2P processes.
- DoD FMR requires digital posting of contract awards to accounting and entitlement systems
- Standard Operating Procedure (SOP) issued by OUSD (Comptroller) and Dir, DPAP Feb 2016. Available at: https://www.acq.osd.mil/dpap/policy/policyvault/USA005175-15-DPAP.pdf
- DoD Procurement Data Standard Service available for accounting and entitlement systems to use at GEX in addition to EDI
- Monthly DoD scorecard on electronic contract data since 2011
Contract Data Performance Over Time FY10-FY18

- % PDF Match
- % EDI/XML Match
- % PDS Match

Contract cover page as data, remainder of the contract as image

Data on line items, pricing, funding, delivery, and clauses

All data necessary to recreate the contract from data

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What is P2P Handshake 3?

Handshake 3 (HS-3) Contract Award/Obligation

1. Contracting office awards or modifies contract. Contract writing system send PDS to the GEX

2. GEX validates the PDS and SLOA centralized service validates the Line of Accounting. GEX routes to appropriate FM system based on AAI

3. FM system system posts the contract award or modification obligation. FM system decommits any excess funds

4. FM system will send an acknowledgement to GEX once the obligation has posted successfully. If there are any failures the acknowledgement will contain the reason for failure

5. Financial and acquisition community need to establish a process to handle any posting failures (i.e. leverage CDR process)
What is P2P Handshake 4?

Handshake 4 (HS-4) Contract Award/Entitlement

1. Contracting office awards or modifies contract. Contract writing system sends PDS to the GEX.
2. GEX validates the PDS and SLOA centralized service validates the Line of Accounting. GEX routes to appropriate entitlement system based on Pay Office DoDAAC.
3. Entitlement system posts the contract award or modification obligation.
4. Entitlement system will send an acknowledgement to GEX once the contract has posted successfully. If there are any failures, the acknowledgement will contain the reason for failure.
5. Financial and acquisition community need to establish a process to handle any failures (i.e. leverage Contract Deficiency Report (CDR) process).
Contract Distribution / Consumption

In general, federal regulations require the use of secure and standard electronic data in the performance of operations. For contracts and modifications, the following applies:

- Distribution: DFARS PGI 204.201 (Oct 2016)
  - PDS XML and X12 EDI
- Consumption: DoD FMR Vol. 3, Chap. 8, 080304 (Feb 2016)
  - PDS XML and X12 EDI
GEX and Routing Channels

• GEX Requirements
  – Interface agreements must clearly state which target systems GEX is permitted to share data with (supports monitoring, audit trails, etc...). Currently the target accounting systems associated with contract writing systems are noted in the agreement by accounting system name.

• Proposed Enhancements
  – Apply universal language to permit sharing of contract data with target accounting systems based on the Agency Accounting Identifier (AAI) contained in the approved contract. The AAI list is an authoritative list of target accounting systems, which can be referenced to achieve the requirement to clearly identify target systems for data sharing.
Handshake 3 Pass/Fail Rates for Accounting Systems

<table>
<thead>
<tr>
<th>Accounting System</th>
<th>Owner</th>
<th>Data Exchange</th>
<th>Oct’18 to Feb’19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contact Actions</td>
</tr>
<tr>
<td>DAI[^1]</td>
<td>4th Estate</td>
<td>PDS</td>
<td>8,139</td>
</tr>
<tr>
<td>DEAMS[^1]</td>
<td>Air Force</td>
<td>PDS</td>
<td>6,635</td>
</tr>
<tr>
<td>Navy ERP[^1]</td>
<td>Navy</td>
<td>XML</td>
<td>35,231</td>
</tr>
<tr>
<td>SABRS</td>
<td>Navy</td>
<td>UDF</td>
<td>9,338</td>
</tr>
<tr>
<td>GFEB[^12]</td>
<td>Army</td>
<td>X12</td>
<td>23,113</td>
</tr>
</tbody>
</table>

**Totals for Handshake 3**

82,456 47,081 57%

[^1]: These ERPs have self-entitlement for a portion of their obligations; figures may represent rates for both Handshake 3 & 4 for the self-entitled obligations.
[^12]: GFEBS figures are limited to SPS contract actions. Army is working to provide PADDs related data.
### Handshake 4 Pass/Fail Rates for Entitlement Systems (non-ERP)

<table>
<thead>
<tr>
<th>Standalone Entitlement System</th>
<th>Owner</th>
<th>Data Exchange</th>
<th>Oct'18 to Feb'19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electronic Receipt</td>
</tr>
<tr>
<td>MOCAS</td>
<td>DFAS</td>
<td>UDF</td>
<td>60,594</td>
</tr>
<tr>
<td>CAPS-W</td>
<td>DFAS</td>
<td>UDF</td>
<td>7,387</td>
</tr>
<tr>
<td>IAPS</td>
<td>DFAS</td>
<td>UDF</td>
<td>5,489</td>
</tr>
<tr>
<td><strong>Totals for Handshake 4</strong></td>
<td></td>
<td></td>
<td>73,470</td>
</tr>
</tbody>
</table>

*OnePay not reported for Handshake 4 metrics as it does not require contract data*

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**Handshake 4 (MOCAS, CAPS-W, IAPS)**

- **Oct-18**: 6,136 contracts, 42% electronically received, 38% manually received.
- **Nov-18**: 6,702 contracts, 48% electronically received, 44% manually received.
- **Dec-18**: 5,304 contracts, 48% electronically posted.
- **Jan-19**: 5,471 contracts, 43% electronically posted.
- **Feb-19**: 4,898 contracts, 43% electronically posted.
Looking Forward

- Enhance X12 data files to support discrete Standard Line of Accounting (SLOA) data
- Eliminate unnecessary translations (MOCAS PDS to UDF)
- Implement HS3 and HS4 (e.g., USMC SPS to PRBUI)
- Implement HS2 (early adopters, lessons learned, etc...)
- Posture financial management systems to support consumption of PDS, including discrete SLOA data
- Improve routing of modifications
- Generate standard electronic data at its inception (HS1), and use it throughout the end to end process.
BACKUP SLIDES
Further Improvements to Reduce Audit Findings

Auditors continue to issue Notices of Findings and Recommendations (NFR) to DoD Components for CVP processes and controls that could be resolved with the proper implementation of electronic data exchanges. Examples:

• Unable to evidence source documents (e.g., a document supporting the accounting entry of an obligation)
• Unable to evidence signature dates (e.g., date approval signed)
• Untimely posting of obligations
• Unable to prevent obligations posting prior to procurement instrument award (in contrast to proper period, this control deals with procurement / obligation authority)
• Posting an incorrect amount of funding or line of accounting
• Unable to evidence a complete record
• Unable to prevent duplicate posting
• Untimely production of source documents to support accounting events, transactions, and entries
• Legibility issues associated with paper documents

Descriptions from auditors on the effects of deficiencies include:

• Org cannot substantiate obligated amounts
• Violations put org at risk of ADA violations
• Liabilities understated
• Payments made for goods / services not received
• Increased risk of unauthorized transactions
• Misstatements may not be detected / corrected timely
• Transactions recorded are incomplete / recorded in a different period
The Procure-to-Pay Process Advocates Working Group (P2PPA WG) requires that contracting and accounting organizations institute an automated capability to perform the following by October 1, 2021:

- Conduct an electronic funds validation or “funds check” immediately prior to awarding a procurement instrument with the fund holding accounting system(s) to ensure continued availability of each accounting citation on the contract. This check shall also validate that the award document, once signed, will interface successfully from the contract writing to the accounting system, and that this will happen in such a way that traceability between commitment and award line items will be achieved (P2P process: Develop Procurement Instrument & Validate Funds) (Handshake 2).
The rules for data exchanges apply to all systems, both new and legacy. All organizations involved in awarding/funding contracts, orders, or modifications are expected to follow this document’s intent, using electronic exchanges where possible. The P2PPAWG recognizes that some legacy systems do not plan to build to electronic data exchanges prior to the planned sunset of a system. If a system is not and does not plan to be capable of performing an electronic preaward funds validation process with other systems via the Global Exchange (GEX), a waiver to the electronic exchange of data must be granted by the co-chairs of the P2PPAWG...
In situations where Handshake 2 can be performed internally in a single system environment, the GEX need not be used. However, such systems must still demonstrate the use of the standard Funds Validation Response Codes (see Appendix B) and report metrics. Note that single system environments must still be able to interface with external systems via the GEX to accomplish Handshake 2 with external organizations.

The P2PPAWG also recognizes that some Services or Components have, or will have, alternative enterprise service buses to accomplish Handshake 2. These alternatives to the GEX may be approved if they can 1) demonstrate the use of the standard Funds Validation Response Codes (see Appendix B), 2) report metrics, and 3) interface with the GEX to electronically accommodate external transactions.
At time of Handshake 2, should the contracting officer propose a contract award whose structure and content differs substantially from what was received on the PR:\(^7\)

- Re-check funds availability and suitability
- Ensure traceability and auditability of proposed contract award line items to funding sources.
- Ensure that the commitment aligns\(^8\) to and provides traceability with the proposed award’s line item structure and/or content, so that the obligation can be successfully posted electronically following award.

- **Ensure that capital and expensed items are listed on different line items** [emphasis added].

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7 See FMR Volume 3 Chapter 8 080204
8 For the purpose of this document ‘alignment’ is described as the ability to link discrete data elements on line items from purchase requests and commitments to contract awards and obligations. If an ERP system requires that PR data elements, such as PSC, be identified on the PR and PO (aka, record of obligation), then requirements and accounting personnel have shared responsibility to ensure that PR data is updated to replicate the information on the contract. As applicable, specific data elements that must align are listed in appendix A.
Exceptions – No funds validation process shall be required when performing any contract action that does not obligate new funds. Also exempted from the Handshake 2 requirement are awards issued by modules within the same accounting and contract writing systems, such as the Defense Logistics Agency’s Enterprise Business System (EBS) and associated procurement modules (EProcurement and eCC). Examples of contract actions that may not necessitate funds checks are:

– Contract modifications to reduce scope which would de-obligate funds. In such cases, approval by the accounting system is not required per FMR Volume 3, Chapter 8, but **notice of the de-obligation may be provided for informational purposes** [emphasis added].
DFARS PGI 204.201
(effective Oct 2009)

(i) Contracts and modifications shall be distributed electronically (except as provided at DFARS 204.270-1(a)) using the following methods:

(A) Indexed Portable Document Format files shall be sent via the Global Exchange system (GEX) to the Electronic Document Access (EDA) (http://eda.ogden.disa.mil) system to provide a human-readable copy of contract documents.

(B) Electronic data files depicting the contract shall be sent in at least one of the following formats via the GEX to EDA and to systems supporting specific offices as set forth in paragraph (ii) below. (Note that the GEX can be used to translate from the formats below to other formats. Organizations should send both formats in parallel unless validation failures have been eliminated.)

1. American National Standards Institute X.12 Electronic Data Interchange standard transaction sets 850 and 860.

(ii) After contract execution, provide an electronic data file copy of the contract and modifications in either X.12 or PDS XML to the following:

(A) The contract administration office...
(B) The payment office....
(C) Each accounting office whose funds are cited in the contract.
(D) Each consignee specified in the contract....
(E) The military interdepartmental purchase request requiring activity in the case of coordinated acquisition.
(F) The receiving activity....

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*080304. Recording Contract Obligations

The office that generates an obligating document, in the form of a contract award, order, or modification, must provide official evidence of the obligating documents, and other supporting documents, via electronic format as defined in the Defense Federal Acquisition Regulation Supplement (DFARS) and Procedures, Guidance, and Information (PGI) 204.201 and in accordance with the SFIS data elements required in Volume 1, Chapter 4, to the office responsible for recording the obligation. The office that is responsible for recording the obligation shall receive the data electronically, in the same formats identified in DFARS, PGI 204.201, and in accordance with the SFIS data elements required in Volume 1, Chapter 4 and the posting logic requirements in Volume 1, Chapter 7. If this transaction fails to take place automatically, the accounting records shall be updated manually, based on the official obligating document in the Electronic Document Access System, within three business days. If the contract contains errors, omissions or deficiencies that prevent posting a Contract Deficiency Report should be created to document the deficiency and request corrective action in accordance with DFARS, PGI 204.270-2. [emphasis added]