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Fee for Service Beneficiary Data Streamlining (FFS BDS)
Local Beneficiary File Analysis
ANALYSIS PAPER

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1 INTRODUCTION

Beneficiary eligibility encompasses Medicare data and business logic within the Medicare Fee-for-Service (FFS) environment that is accessed multiple times by multiple stakeholders throughout a claim's lifecycle. Beneficiary eligibility is checked at a minimum:

- By FFS Shared System (SS) prior to processing the claim using local files.
- By the Common Working File (CWF) system prior to determining utilization of benefits.

In June, 2011, at the request of senior CMS officials, the three shared system maintainers, HPES (MCS and FISS), GDIT (VMS) and 2020 Company (CWF) conducted a summit with CMS management representing a number of operating divisions. The maintainers collaborated to present numerous improvement ideas, with the end goal of finding efficiencies that will enable CMS to get the greatest benefit from the programming hours contracted each quarter.

One of the improvement ideas put forward was the development and use of a common eligibility service that would occur earlier in the claims lifecycle than the current CWF eligibility check. The maintainers proposed to consolidate the FFS eligibility functionality (currently residing in 4 different systems) into one shared service, accessible at the beginning of the claims adjudication process. This new service will be used by all 4 systems to eliminate duplicate or unnecessary processing.

Subsequent discussions took place between the maintainers, CMS and two A/B MACs also participated in the discussions, which further defined the Eligibility Service and ideas for a phased implementation.

Results from the research and analysis done as part of CMS CR 7548, 7611 and 7712, 'Fee-For-Service (FFS) Common Eligibility Services Conference Calls and Research', was presented to CMS in April of 2012.

As part of this CR, all Fiscal Intermediaries (FIs), Carriers, Durable Medical Equipment Medicare Administrative Contractors (DME MACs), Part A and Part B Medicare Administrative Contractors (A/B MACs), Enterprise Data Centers (EDCs) and Shared System Maintainners (SSMs) shall perform analysis to eliminate the multiple beneficiary data sources among all contractors. The pre-requisite to the data store reduction process is to allow the SSMs to connect to the CWF BDS System. The BDS system was implemented in October 2013 via CMS CR 8091-C.

2 REFERENCED DOCUMENTS

Table 1: Referenced Documents

Document Name	Document Number	Issuance Date
FFS Strategies for Eligibility Services Workgroup presentation slides		July 8, 2011
CMS CR-7548 – Common Eligibility Services Conference Calls and Research	CR-7548 in E-chimp	August 2, 2011
CMS CR 7712- Fee for Service Common Eligibility Services Conference calls and research.	CR-7712 in E-chimp	December 12, 2011
CMS CR 8091 A/B/C –FFS BDS Analysis, Development and Implementation	CR-8091A CR-8091B CR-8091C	October 7, 2013

3 PURPOSE

Contractors shall develop an analysis document for elimination of local shared systems beneficiary files. Contractors should include at least the following:

8285.1 Contractors shall develop an analysis document for elimination of local shared systems beneficiary files. Contractors should include at least the following:

1. Contractor Name
2. System (FISS, MCS, VMS, Local Data Center)
3. File Name
4. Description of File and Data
5. Usage (how many times called for daily processing i.e., cycle on-line query, batch jobs, etc.)
6. Alternative solution to access the data from BDS

8285.1.1 Analysis shall include, but not be limited to, the following areas:

1. Correspondence systems
2. Financial processing including interface with HIGLAS
3. MSNs
4. COBC processes
5. Reporting
6. Etc.

8285.2 Contractors shall identify edits that require local beneficiary data stores and analyze if any of the edits can be consolidated and moved to the BDS system.

3.1 ASSUMPTIONS

- There is sufficient network capacity and processing to handle eligibility inquiry and response transmissions within the FFS network.
- An increase in the utilization of CPU resources in claims processing due to the provision of a single service is acceptable.
- An increase in transaction volumes at the HP host is expected as MACs and shared systems from both CDS (Companion Data Services) and HP EDC will query the BDS system resident at the HP host.

3.2 8285.1 - ELIMINATION OF LOCAL BENEFICIARY FILES AT SHARED SYSTEMS

The Shared Systems maintainers, CWFM and MACs will implement new code that will allow each contractor to transition the retrieving of beneficiary data from the shared system local beneficiary data (LBD) stores to BDS. These modifications will eventually lead to the elimination of the storing of the beneficiary data locally within the shared systems. In order to fully eliminate the local beneficiary data stores, the following functions have to be implemented:

- Modifications are required to the current Phase-1 BDS system to eliminate the existing production BDS limitations.
- Redefine the BDS Technical Architecture so that the BDS system is made available to a broader set of users such as MACs.
- Make modifications to CWF, BDS, Shared Systems and MAC non-base systems to retrieve beneficiary information from BDS. The shared systems and MACs will eliminate the local beneficiary data store in a phased-approach.

3.2.1 BDS upgrades prior to CR 8285 phase-2 implementation

There are several updates that will be required to the BDS system which are prerequisite to CR 8285 implementation. These updates are based on operational issues that were identified after BDS was implemented with the October R2013400 release. Each of these modifications will be implemented via CMS CRs.

- 3.2.1.1 The VMS system has claims that contain multiple claim lines and one or more of the claim line is set to a “delete” status with the use of a ‘DL’ action code. These “delete” action code claim lines can often have incomplete data resulting in BDS consistency edits causing the remainder of the claim to not get beyond the consistency editing within BDS. To retain the order of the claim lines when sending the BDS request, VMS would like BDS to consider adding a delete indicator to the line portion of the CABEBDSB copybook. If BDS could bypass all editing (consistency, etc.) associated with the line with the delete indicator set, VMS could preserve the claim line order from the BDS request to the BDS response. This would also permit the DME MACs to more easily research any claims sent to BDS as the line errors will be in sync between the claim lines on the BDS stored response and the claim screens within VMS.
- 3.2.1.2 To address this issue, CWFM will modify BDS Part B/DME query layout to include a delete indicator in the line item area.

3.2.1.3 The Part A BDS query for Home Health (HH) does not contain a field for RIC code that determines if the HH is for Part A or B. Due to this some of the entitlement edits for Home health claims (5210 and 5220) are being bypassed as it was setting incorrectly (bypassed via CWF Problem log 29761). BDS query has to be updated to include a part A or B Indicator for Home Health queries.

3.2.1.4 To address this issue, CWFM will modify BDS Part A query layout to include an 'A or B' indicator.

3.2.1.5 Medicare Secondary Payer (MSP) Issues:

MCS has discovered an issue during testing with the MSP information. The current BDS system sends an abbreviated MSP trailer that does not contain the MSP Insurer type or Insurer name and address from BDS. MCS will not be able to process an MSP delete without the Insurer information to identify which record should be deleted.

FISS has created FS7303 to address the local file updates in FISS from BDS based on the abbreviated MSP trailer. According to this, there are several differences between what is returned from CWF and what is returned from BDS. For FISS to apply the BDS response to the MSPI record, more MSP data fields are required from BDS. Currently FISS is bypassing all MSP edits.

To address these MSP issues, CWFM will modify BDS to return a full MSP trailer, similar to the CWF response trailer.

3.2.1.6 True not-in-file (TNIF) Issues: Several incorrect TNIF records were identified in CWF after the BDS software was implemented in production. These TNIF records did not contain the Host ID or corrected Health Insurance Claim (HIC) to identify the beneficiary's location. The CWF host has been using HICR to correct the TNIF 51 to a TNIF 52 to allow the incoming claim to generate a TNIF request to CMS when the BDS claim is sent to CWF for processing.

To address this issue, CWFM will analyze the bad TNIFs in production and create a one-timer to either correct or delete the incorrect TNIF records.

3.2.1.7 Out-of-Service (OSA) Testing Issues: Currently, UAT, Single Testing Contractor (STC) BETA and CWFM do not have test environments set up to test real-time OSA processing in BDS. To determine OSA, BDS spins thru the HIMR connections to find the CICS connection ID for the host ID on the claim. CWF copybook "HIMRHOST" defines the production connection IDs and therefore cannot be changed in the executable module. Therefore, STC BETA and CWFM cannot test host-to-host connections with the BDS Load modules. The HIMRHOST table must be modified so that the data content of the table can be changed by each testing entity.

3.2.1.8 To address this issue, the HIMRHOST copybook can be moved to a VSAM file layout where CWFM and STC can enter their own CICS region connection information to

allow OSA processing. The VSAM table can be loaded into the program dynamically during execution.

3.2.1.9 The MCS software does not allow MACs to bypass BDS edits. Per CMS instruction, MCS will modify the Part B software to bypass or “turn off” BDS edits when instructed by CMS.

3.2.1.10 Listed below are the edits that the DME MACs would like to have modified in VMS with a future BDS CR. These edits function differently for the BDS interface than when the CWF edits are received in batch.

- 54/5052 – XREF and Corrected HICNs – When this error is received, a Trailer 01 is also returned with the corrected or cross-reference HICN. The VMS batch cycle updates the claim and the VMS Beneficiary Master file with the corrected HICN information. When this error is received via BDS, the operator working the claim is not allowed to update the Beneficiary Master file. The update request must then be sent to a different department before the claim can be worked.
- UR/538H – Incarcerated Beneficiaries- the VMS batch looks at the trailer 32 data to determine which line to fire the CWF edit based on the incarceration time period and the date of service on the claim. The VMS online BDS interface does not have this logic for this edit.
- UR/5232 – There is batch logic in VMS to add the HMO ID from Trailer 05 to the claim to be sent downstream. The VMS online BDS interface does not have this logic in VMS. So if the claim line is denied based on the receipt of the BDS edit, the HMO number is not being captured on the claim.

3.2.2 CWF BDS Technical Architecture

Based on the assumptions listed in Section 3.1, the BDS architecture will need modification to address the large volume of queries that will be received from shared systems, MACs and potential other users. See section 3.2.7 for volume analysis. As the demand for the BDS data increases, a 24/7 requirement for data availability becomes a key factor. Additionally, all current production systems that depend on the CWF data files should continue to process within their current timeframes to meet Service Level Agreements (SLA).

A new CICS region to execute BDS transactions will be created at the CWF HP EDC. This region will be setup similar to a CWF Host region but will contain only the essential BDS support modules.

BDS currently shares the CWF VSAM data files for processing all queries. The CWF HP Host and the shared systems have been accommodating the claims cycle timelines to optimize the availability of the CWF files to both systems since BDS Phase-1 was implemented. As the shared system local beneficiary stores are eliminated, all its external users (MACS) will be directed to BDS. This increase in volume will be detrimental to the CWF cycles if BDS continues to use the same CICS regions and files.

Figure 1 depicts the new CWF BDS technical architecture with BDS moving from the CWF Host regions to a new BDS Host region using a new single BDS Store created and maintained by CWF.

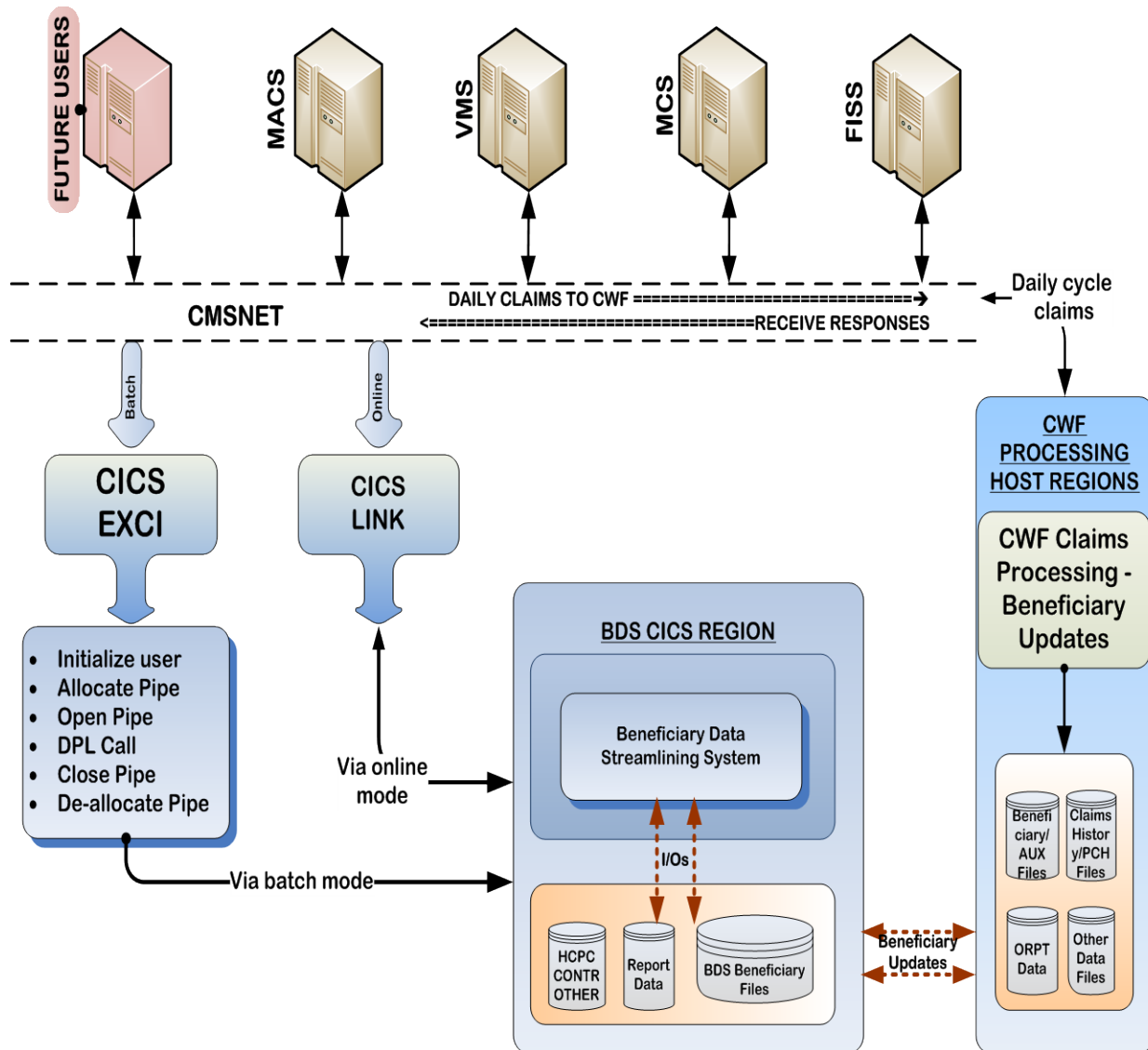


Figure 1 - BDS Phase II – Revised CWF architecture

3.2.3 SSM BDS Technical Architecture

The shared system maintainers will utilize disk cache to store the beneficiary data information received via BDS to be used for claims processing and other related tasks. This cache mechanism will also enable the software much faster access to data since the controller could now pre-load data to its memory. Figure 2 is a high level SSM design framework:

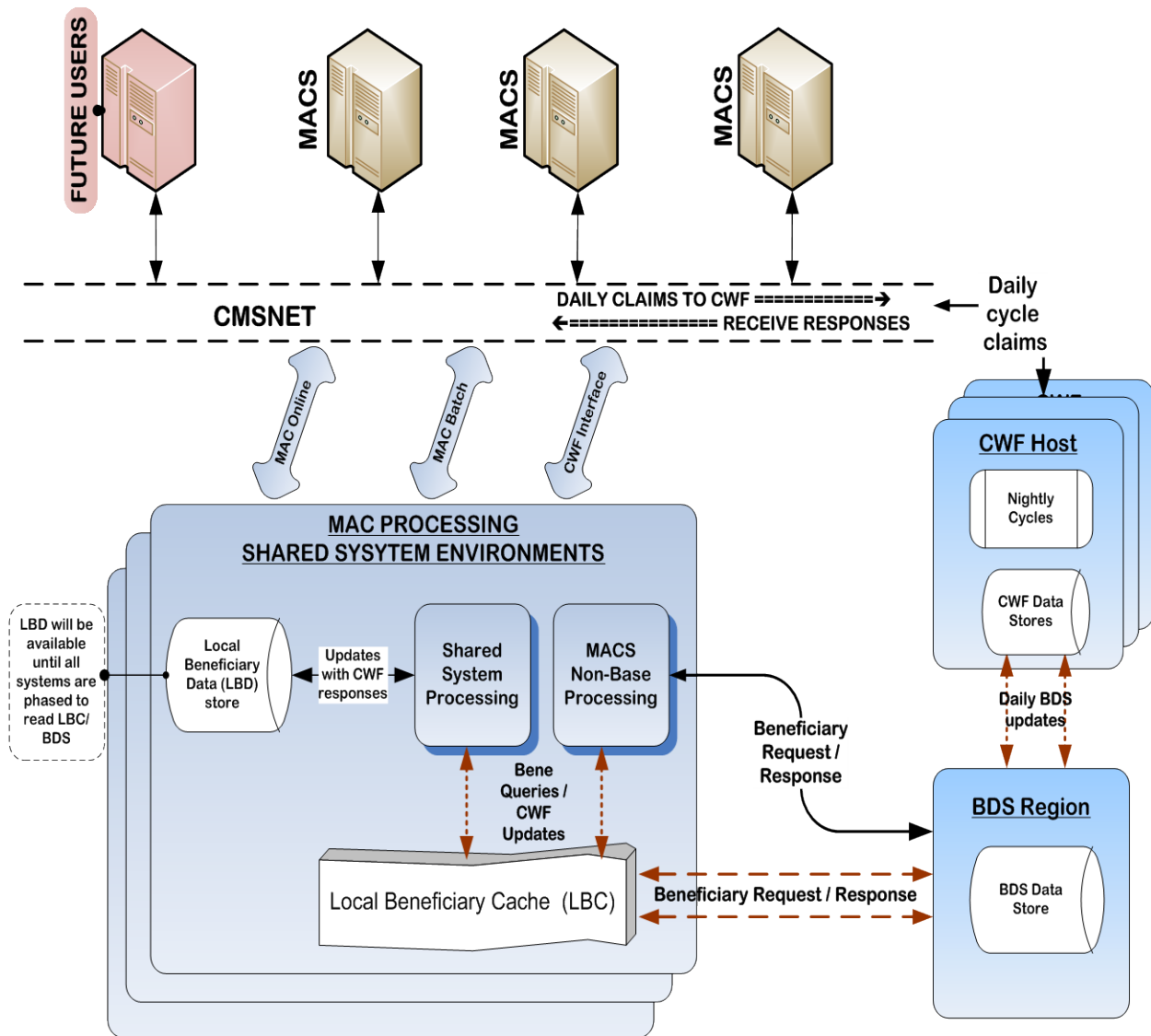


Figure 2 - BDS Phase II Revised SS architecture

The shared system maintainers will modify the Part A, B and DME systems to utilize cache to retain information received from BDS to be used for claims processing. Tasks to build and maintain the cache are described below:

- 3.2.3.1 Build a local beneficiary cache (LBC) of BDS eligibility information from the BDS responses (Phase 1) already returned for claims processing so that multiple claim processing functions in a given business day or cycle could use the local eligibility information without continued BDS interfaces.
 - a. The key to this file would be the HIC number.
 - b. The non-key data would include the CMS national fields, such as the full beneficiary name, beneficiary address, sex, date of birth and date of death. Additionally, this BDS eligibility file would retain the last BDS response date, and the last full BDS inquiry date.
- 3.2.3.2 Design a real-time maintenance facility for the LBC.
 - a. For active claims, this LBC would be updated interactively in CICS as BDS responses are processed during the day.
 - b. For active correspondence and Automated Response Unit (ARU) functions, through the new eligibility access service, use the new phase 2 eligibility query transaction to request beneficiary eligibility information and update the LBC.
 - c. CWF responses would continue to update the LBD.
 - d. Secondly, the batch CWF responses would also generate updates to the LBC so that the LBC would always have the most current beneficiary information from CMS.
- 3.2.3.3 Create a new beneficiary eligibility access service. Consolidate and standardize all SSM beneficiary eligibility inquiries in CICS and batch to use the new service.
 - a. Design a tiered access method so that CMS beneficiary eligibility information on the LBC is used, if available, before LBD information.
 - This layered strategy allows SSM to keep full beneficiary eligibility information while implementing BDS Phase-2 in phases so that all business processes, even annual processes such as history purges and 1099's can be tested and confirmed.
 - This 2-tiered file structure (LBC and LBD) avoids contention issues between online and batch cycle processes that both need update authority on the file.
 - b. Design the beneficiary eligibility service with a currency tolerance such that business functions could request that beneficiary information is no more than 'x' days old. This currency tolerance feature would allow non-critical or internal MAC functions to use historical beneficiary information (from the LBC or the LBD file),

while making sure that critical functions, such as HIGLAS 271s and ARU responses used beneficiary information that was no more than 1 day old.

- c. Design various return eligibility views to minimize impacts within SSM.
 - Simple – full name, sex and date of birth
 - Deductible – full name, sex, DOB and deductible for requested year
 - Full – all SSM and BDS data elements
 - Mailing Address – formatted name/address area for mailing
- d. Design accessor service to interface with the LBC and BDS and the existing LBD, depending on the request.
 - If HIC data is found on the LBC within currency tolerances for the business function, return the LBC information.
 - If the LBC information is not current enough for the business function, dynamically format and send BDS Beneficiary Inquiry (new Phase 2 interface). Update LBC with BDS Beneficiary Response information and then return eligibility information.
 - If the HIC is not on the LBC and currency is not required, return the LBD data, if available.
 - For test environments, if the HIC is not maintained at BDS, possibly return LBD data.

3.2.3.4 Identify key business functions that must absolutely have current beneficiary data, depending on the beneficiary data elements used. For example, the beneficiary sex and date of birth information would not change frequently, but the beneficiary mailing address for MSNs may need current address information.

- a. Identify isolated situations, such as deceased beneficiary development letters, where SSM could develop and evaluate the feasibility of a direct batch interface to BDS via External CICS Interface (EXCI) without the CICS region.
- b. For batch cycle critical path functions where interactive BDS interface is not feasible, design an upfront BDS eligibility inquiry mechanism so that current eligibility information is staged and available when needed by the business function.

3.2.3.5 Work with CMS and the CWF maintainer to determine the best way to synchronize the BDS data with the LBC, given the business needs and data volume considerations.

- a. Develop daily or weekly processes to synchronize these eligibility files, perhaps generating BDS queries for every HIC on the LBD file.
- b. Once all the LBD interfaces have transitioned to the new beneficiary eligibility access service, work to eliminate the redundant data between the LBC and LBD files.

3.2.4 BDS Phase-2 Software modification

The following CWF BDS software changes will be made as part of CR8285.

3.2.4.1 New Beneficiary Data Store with Host ID transparency:

With the elimination of beneficiary data fields at the SSMs, contractors will not have access to the host ID information currently being used to direct the claims/BDS queries. With BDS data being made available to all contractors (SSMs, MACs and maybe more), the determination of which CWF host a beneficiary resides at will have to be transparent to the user. Two data store alternatives are being proposed in this analysis paper. The first alternative will continue to use the CWF VSAM files for BDS Phase-1. The second alternative will support the BDS Phase-2 system. Eventually BDS Phase-1 system will switch over to the new BDS data store.

- a. A new CICS region will be created at the CWF HP EDC for BDS. All contractors will send BDS queries to this new region.
- b. Data store alternative 1:
 - BDS will continue to use the CWF data stores to process all queries. A new beneficiary location file containing the Host ID and Cross Reference (XREF) information will be created. This file will be used to direct queries to the appropriate CWF Host data files.
- c. Data store alternative 2:
 - As part of BDS Phase II, CWF will create a separate set of BDS Beneficiary data files solely for BDS usage. These BDS beneficiary files will contain the same data as the CWF files and will be updated with the daily modifications from Enrollment Data Base (EDB) and claims. The Beneficiary data store will be physically distributed by HIGIT and will not be split by CWF Host ID. The files will be created as VSAM and will be made available to all contractors.
 - The CWF Beneficiary files used for BDS currently utilize approximately 250 gigabytes of storage. This includes 10 physical files per host and the various indexes maintained for these keyed VSAM datasets. The new BDS beneficiary data file will utilize the same amount of storage or less. This structure will eliminate OSA processing for BDS.
 - The files in the BDS Data store will be comprised of the following:
 - Beneficiary eligibility information
 - REP Payee and other address data
 - MSP, HMO, and Hospice Auxiliary information
 - HCPCS and Contractor Tables
 - The CWF daily processing will include a new job to update the BDS Beneficiary Data store with updates from EDB and claims cycle.

3.2.4.2 Beneficiary Address Data fields at BDS:

There are beneficiary other address data fields that are currently in use for SSM processing in the Local Beneficiary data stores that are not in the CWF files.

Currently, the Part A, B and DME MACs can accept a temporary address for a beneficiary and store this information in each of the SS. This address can be used for up to six months to send the beneficiary his Medicare Summary Notice (MSN) and any correspondence during this time. This processing is primarily used for “snow birds” and whenever a beneficiary is temporarily relocating for a short period of time, but is not changing their permanent address in CWF. SS stores the CWF address and restores it to the beneficiary’s record once the temporary address has expired. The permanent address is used for pricing and jurisdiction determination. All address fields will be moved to CWF BDS to consolidate the temporary address data for each shared system.

- CWF will expand the Representative (REPP) file to maintain additional addresses, in parsed formats that will be available to all SSMs.
- Consolidating the address information at BDS will generate a workflow change for the MACS. MACs will now have to access a CWF-provided screen to maintain the temporary address data and its related fields. CWF will generate a new CICS screen to maintain the address information for BDS. Therefore, anytime an address is changed, a BDS query may need to be submitted to update the cache.
- The Beneficiary address data elements are as follows:

No	<u>Address Fields</u>	Description	Element Source - *SOR	CWF Element
1	Address-Flag	This field is used when the beneficiary sends notice of a permanent or temporary address change	VMS	Add to CWF
2	Address Type	Address type of beneficiary held address	MCS	Add to CWF
3	Address Expire OPID	This is the identification number of the operator who has changed the address and added the address flag and expiration date	VMS	Add to CWF
4	Address-Note-Sequence	The sequence number of the beneficiary address note which stores the CWF address until the temporary address expires.	VMS	Add to CWF
5	Permanent Address 1	Line 1 of the beneficiary or rep payee’s address.	All SSM	CWF REPP
6	Permanent Address 2	Line 2 of the beneficiary or rep payee’s address.	All SSM	CWF REPP

No	<u>Address Fields</u>	Description	Element Source - *SOR	CWF Element
7	Permanent Address 3	Line 3 of the beneficiary or rep payee's address.	All SSM	CWF REPP
8	Permanent Address 4	Line 4 of the beneficiary or rep payee's address.	All SSM	CWF REPP
9	Permanent Address 5	Line 5 of the beneficiary or rep payee's address.	All SSM	CWF REPP
10	Permanent Address City	City	All SSM	CWF REPP
11	Permanent Address State	State	All SSM	CWF REPP
12	Permanent Address Zip code	Zip code	All SSM	CWF REPP
13	Permanent Country	Country	All SSM	Add to CWF
14	Temporary Address Begin	Date temporary address begins	All SSM	Add to CWF
15	Temporary Address End	Date that the temporary address will expire	All SSM	Add to CWF
16	Temporary Address 1	Line 1 of the beneficiary or rep payee's address.	All SSM	Add to CWF
17	Temporary Address 2	Line 2 of the beneficiary or rep payee's address.	VMS	Add to CWF
18	Temporary Address 3	Line 3 of the beneficiary or rep payee's address.	VMS	Add to CWF
19	Temporary Address 4	Line 4 of the beneficiary or rep payee's address.	VMS	Add to CWF
20	Temporary Address 5	Line 5 of the beneficiary or rep payee's address.	VMS	Add to CWF
21	Temporary Address City	City	VMS	Add to CWF
22	Temporary Address State	State	VMS	Add to CWF
23	Temporary Address Zip code	Zip code	VMS	Add to CWF
24	Temporary Country	Country	All SSM	Add to CWF
25	Address Change Date	The date beneficiary address was changed.	VMS	Add to CWF
26	Zip Delivery Code	Code used for mail sorting. Same as Mailing address Zip code.	SSM	Add to CWF
27	Scrubb Code	Indicates whether the address is to be scrubbed for post office bar coding	VMS	Add to CWF

No	<u>Address Fields</u>	Description	Element Source - *SOR	CWF Element
28	Rep Address Undeliverable-Ind	Rep Payee undeliverable	FISS	Add to CWF
29	Temporary Address Undeliverable-Ind	Temporary address undeliverable	FISS	Add to CWF
30	Beneficiary Telephone Number	Telephone number of the beneficiary	SSM	Add to CWF
31	Suppress Report Indicator	Used for Letter Generation from Post Pay FISS Reporting System for excluding claims Bypass online beneficiary file editing, Bypass MSN generation Populates FSSCACA-MAIL-SUPPRESSED indicator for ACS, etc.	FISS	Add to CWF Further analysis to determine if field should be part of 3.2.5.2.

3.2.4.3 Beneficiary Match Criteria for BDS:

Currently, all CWF beneficiary query requests fall within the CMS's requirement for a beneficiary matching criteria using the four fields (HIC, DOB, Sex and or Name) combination. However, there are situations in the shared systems' processing when only the HIC number is present as the beneficiary ID. The shared systems will utilize the matching criteria fields from the incoming claim to populate on the BDS query.

Secondly, the Quality Improvement Organizations (QIOs) do not provide the complete beneficiary Health Insurance Claim (HIC) when they send their request to FISS. QIOs only send the last 4 digits of the beneficiary's HIC. The Part A Claims area locates the HIC number by searching the FISS beneficiary file (MAP1161) using the beneficiary's name provided by the QIO. With the removal of the Local beneficiary store, an easy beneficiary search mechanism utilizing the beneficiary's name and last 4 digits of HIC will need to be available in the BDS system in order to process the QIOs' or similar queries.

3.2.4.4 BDS Data Request Functionality

As part of Phase-2, the Shared System or MAC can request the BDS to provide beneficiary or other data by providing a HICN and/or optional query key data. The BDS will retrieve CWF beneficiary and/or auxiliary data and return it in a pre-determined format back to the contractors.

Shared systems or MACs can request data via CICS LINK or EXCI. Optional provisions to access the BDS data directly could be made available for high volume tasks. This option will be further analyzed in the detail design requirements.

BDS will create new transactions for Part A, B and DME for the following data requests:

- Beneficiary Eligibility data – See Appendix A1 for Basic Beneficiary and deductible
- Beneficiary Rep-payee and Address data – See Appendix A2 for Address data

- Beneficiary MSP data – See Appendix A3 for MSP data
- Beneficiary Hospice data – See Appendix A4 for Hospice data
- Beneficiary HMO data – See Appendix A5 for HMO data

The BDS data input query will have the option to request any combination of the beneficiary and auxiliary data information. Example – beneficiary eligibility and address data only; beneficiary eligibility and deductible data only; MSP data, etc. BDS phase 2 record layouts will be developed during the detail analysis and design phase.

3.2.5 SSM Software modifications

Each shared system maintainer will update their system areas using beneficiary data for Phase 2 BDS. This process will be done in a phased approach to minimize risk to the claims processing environment.

High level analysis on each subsystem has been completed by each shared system maintainer and can be provided upon request. Detailed analysis will be required by each maintainer to implement the task. Appendix B describes the shared system software processes that require modifications due to BDS.

3.2.5.1 Each sub-system will be modified to transition the reading of beneficiary data from LBD to LBC. Software will determine that if beneficiary is non-existent or has passed the currency tolerance. Each shared system maintainer will implement a tiered access method to retrieve beneficiary data for all processing, first from LBC and then from BDS.

3.2.5.2 There are various fields computed and stored at the shared systems local beneficiary data store for each beneficiary that are used for daily processing. These are not beneficiary personal or entitlement fields, but fields that direct how the claim is to be processed for the beneficiary. Shared systems will continue to have a local store for each beneficiary maintaining these support fields for claims processing. These supporting fields would remain independent of CWF as they can vary for each maintainer. Examples are:

- Notepads (VMS)
- Force Query Code – N/Y. Y forces the next claim for the beneficiary to query
- EARS-Ind Online – This indicates whether Entity action record for online editing of the claim hit processing (VMS)
- Other communication/Instruction fields for the claim (MSP Instruction by examiner), Action flags, status info, switches etc. (All SSMS)
- Beneficiary Submitted Indicator, etc.

- 3.2.5.3 Shared systems will continue to update the LBD with information received from the CWF responses in the daily cycles. This process will continue to support the sub-systems that have not yet transitioned to access LBC/BDS.
- 3.2.5.4 Shared systems will work with external entities such as HIGLAS to ensure all interfaces to such systems are providing information retrieved from BDS.
- 3.2.5.5 Shared systems will continue to process claims eligibility via BDS prior to adjudication and transmission to CWF.
- 3.2.5.6 Shared systems will work with CWF, STC, and CWF Host to ensure connectivity to the new BDS CICS region.

3.2.6 MAC system modifications

MACs will update their system areas for non-base processes as part of Phase 2 BDS. This process will be done in a phased approach to minimize risk to the claims processing and MAC environment. Appendix C describes each MAC's non-base processes.

High level analysis on each subsystem has been completed by each MAC and can be provided upon request. Detailed analysis will be required by each MAC to implement the task.

- 3.2.6.1 The MAC's internal business processes and reporting currently use the shared system local beneficiary data stores extensively on a daily basis across many MAC sub-systems. For daily jobs that are limited to each day's claims processing data, MAC will analyze to see if the SS LBC is sufficient for such processing. MAC will modify the non-base jobs to access the LBC for beneficiary data.
- 3.2.6.2 MAC will analyze to see if the non-base process requires beneficiary data that is not resident within the daily LBC. With the elimination of the LBD the MACs and EDCs may have to read BDS directly for beneficiary information for non-base jobs as the shared systems may no longer have the cached beneficiary data or data for the desired beneficiary. MACs will make modifications to the non-base jobs to access BDS data via CICS LINK or EXCI.
- 3.2.6.3 MACs will work with external entities such as Local Data Centers (LDC) to ensure all beneficiary data extracts for data marts, data warehouses or other such repositories are retrieved from BDS.
- 3.2.6.4 MACs will ensure that all user interfaces displaying beneficiary data show data retrieved from BDS either via LBC or direct BDS reads.
- 3.2.6.5 MACs will work with STC, and CWF Host to ensure connectivity to the new BDS CICS region.

The MACs are better positioned to determine changes at the MAC level once each shared system maintainer has completed its detail analysis and design for CR 8285.

3.2.7 Enterprise Data Center/Virtual Data Center (VDC) modifications

The CDS and HP EDC will work with all maintainers and contractors to ensure that Phase 2 components are established in the testing and operational environments. Both EDCs/VDC will perform further analysis during the detail design phase.

3.2.7.1 The CDS EDC will work with CWFM and STC Beta to setup a test BDS CICS region. CDS will setup security access and connectivity to these regions.

3.2.7.2 HP EDCs/VDC will work with CWFM to analyze data storage requirements for the BDS data store.

3.2.7.3 HP EDC will setup a new BDS CICS Region and provide access to all contractors for User Acceptance Testing (UAT) and Production. This region will have same security access as the CWF satellite CICS regions. Connectivity from the CWF Satellite Regions to the new BDS CICS region will be established.

3.2.7.4 EDCs/VDC will work with SSM to analyze the storage and memory needed to set up the LBC process.

3.2.7.5 EDCs/VDC will work with MACs to support the transition of non-base jobs from LBD to BDS.

3.2.8 BDS Volume Analysis

A preliminary expected BDS Phase-2 transaction volume analysis submitted by some contractors depicts a potential increase in BDS queries as each contractor incrementally implements the changes to eliminate the LBD. The table below depicts some of the expected volumes pertaining to claims workload and MAC data extracts.

No	System Area	Frequency		
1	J9 – Part A FOIA	Monthly	901,000+	
	J9 – Part A Data warehouse extracts	Weekly	10,500+	
	J9 – Provider stub files	Monthly	12-13 million	
	J9 – Part B Data warehouse updates	Weekly	1.1+ million	
2	NGS – DME batch	Daily	170,000+	
	NGS – Part A batch	Daily	110,000+	
	NGS – Part B batch	Daily	7+ million	
3	GBA – Part B batch	Daily	6+ million	

A sample weekly Phase -1 BDS counts reviewed by CWFM from the CWF host sites after CR8091 implementation showed a total of 29 million+ BDS transactions for all claim types combined. With each SS and MAC sub-system accessing BDS, the volume of transactions will

increase exponentially. Each contractor will review the volume of transactions expected during the detail analysis and requirements phase.

3.2.9 Testing

3.2.9.1 Unit testing with BDS

CWF Maintainer will continue to provide the CICS region ‘CMHACT’ for BDS Unit testing by the SSMs. A sample data store can be populated by CWF Maintainer with data received from the SSMs.

3.2.9.2 BETA / UAT testing

The current UAT setup for VMS allows users to either test with a HICN setup at the CWF UAT or use the “fake reply” process. The “fake reply” process is where a test “fake” HICN can be setup in the VMS system and the claim will process normally except the claim does not get sent/processed with CWF UAT. VMS can create their own test HICNs or have the history copied from Production into UAT (but the HICN is not sent to CWF to be added to CWF UAT).

Currently, MACs provide the HICNs to CWF when they need that HICN added to CWF UAT and expect that process to continue. However, the majority of VMS testing is done using a “fake reply” with test HICNs. Also, normally SSMs do not get the CWF Release Code in UAT at the same time as the SSM Release coding. Therefore, they have to hold off testing items that involve CWF, but are able to still perform other testing that does not involve CWF changes by using the “fake reply” process. Therefore, MACs need to still have a way to process claims in UAT with the “fake reply” process using HICNs that are not setup at the CWF UAT.

- A new BDS region will be setup at the CWF UAT environment. HICNs can be added to this region for testing as currently done with the CWF UAT regions for data storage alternative 1. Data will be loaded accordingly from production to UAT.
- Additionally, CWFM can set up a BDS transaction exclusively for UAT testing that will read the BDS query and generate a BDS beneficiary record for the HIC if the beneficiary record is not found. This process will not allow for duplication of HICs across the three shared systems. As each SS testing in the current environment is independent due to the LDC, MACs can currently duplicate HIC numbers across all three SSs. To mitigate this issue, each MAC could have a unique set of numbers in the HIC string allotted for testing e.g. HICs starting with 611., 612..., etc.
- SSMs can continue the UAT testing by setting up HICs directly into the LBC from the test claims.
- The current process at UAT to generate a “fake reply” for CWF will continue.

3.3 8285.2 – CONSOLIDATION OF EDITS AND PROCESSING

High level edit analysis on each subsystem has been completed by each shared system maintainer. Appendix D describes the SSM edits that will require further analysis and modification due to BDS Phase 2.

- The SSM will review the edits set during the conversion of each sub-system to access LBC/BDS. Edits using LBD data elements will be replaced with similar data elements from LBC/BDS.
- BDS will edit Beneficiary temporary address fields for validity when entered by MAC on the CICS screens.

4 IMPLEMENTATION APPROACH

The BDS Phase 2 will follow the implementation approach set in the CMS CR 7548- Common Eligibility Services Research. BDS Phase 2 will be implemented in multiple phases starting with (1) Upgrades to the existing BDS Phase-1 (2) Implementation by CWFM for Phase 2 BDS (3) Implementation of the LBC structure by SSM (4) Incremental transition of system areas to access LBC/BDS by SSMs and MACs. Below is a tentative BDS Phase II schedule.

4.1 CR-8285 PRELIMINARY SCHEDULE

No	Task	Contractors	Implementation Date	Approach
1	Implement BDS Operational Issues (Section 3.2.1 of 8285 paper)	SSMs, CWF,	October 2014	New CMS CR
2	Perform detail analysis, design and requirements for SSM Local Beneficiary Cache (LBC), SSM transition of sub-systems to LBC, and CWF BDS Phase II software	SSMs, CWF, EDCs, CWF Host	October 2014	New CMS CR XXXX-A
3	Develop implement BDS Phase II Software	CWFM	January 2015	CMS CR XXXX-B
4	Develop and implement LBC and alpha test using CWFM BDS test region. BDS Phase II software Beta and UAT support.	SSMs, CWFM	April 2015	CMS CR XXXX-C
5	Phase in each SS sub-system transition from Local Beneficiary Data (LBD) stores to LBC	SSMs	Multiple releases	New CMS CR
6	Phase in non-base processes from Local Beneficiary Data (LBD) stores to LBC and/or BDS.	MACs	Multiple releases	New CMS CR

5 RISKS:

Risk	Mitigation
Shared Systems	
<ol style="list-style-type: none"> 1. Adding a second real time BDS transaction may slow response time from Shared Systems to BDS and back. 2. Non-availability of the CWF CICS region to accept the new transaction may be an issue when attempting to perform a process that requires the cached beneficiary information and the time limit for retaining the beneficiary data has expired. 3. Shared System documentation updates will be needed for the new BDS transaction and updates for any FISS changes due to the elimination or consolidation of the internal beneficiary data file. Examples of documentation updates include but are not limited to reason code updates, screen changes, and processing changes. 4. Performance within each DME MAC processes as well as performance across all systems may be impacted due to the increased BDS traffic. 	<ol style="list-style-type: none"> 1. A separate BDS CICS region for all BDS queries will ensure that the region is available to contractors at all times and response times will be acceptable. 2. A new CWF data store for BDS will ensure that the files are available all times for BDS queries. 3. Documentation updates will be done along with the modifications to each SSM subsystem. 4. GDIT will need to design a process that sends BDS inquiry transactions in the most efficient manner and stores the returned data in a beneficiary cache. The design of the cache, number of entry points for the BDS transactions, length of time to retain the cached data are all design questions that will need to be answered.
CWF	
<ol style="list-style-type: none"> 1. Increase in data requests from SS and MACs can degrade the performance of the CWF BDS CICS region causing resource restrictions. 	<ol style="list-style-type: none"> 1. CWF and HP EDC will address resources for the BDS region periodically and make adjustments to accommodate the volume of transactions.
MACS	
<ol style="list-style-type: none"> 1. Adding a second real time BDS transaction to non-base jobs may slow response time from MAC to BDS and back. 2. Contractors will need sufficient notification of when the beneficiary eligibility information will no longer be updated in our local systems to ensure that our local processes function without interruption. 	<ol style="list-style-type: none"> 1. A separate BDS CICS region for all BDS queries will ensure that the region is available to contractors at all times and response times will be acceptable. 2. BDS Phase II will be implemented in multiple phases to ease transition of MACs to the new process. CWF and Shared systems will implement software changes prior to

Risk	Mitigation
Contractors will also need adequate notification of the replacement eligibility files that will be provided to allow for testing and staff training.	MAC making updates to their jobs.

6 APPENDICES:

Appendices A thru D described below are included as separate documents.

- Appendix A1 - Basic Beneficiary and deductible layout
- Appendix A2 - Address data layout
- Appendix A3 - MSP data layout
- Appendix A4 - Hospice data layout
- Appendix A5 - HMO data layout
- Appendix B - Shared Systems processing areas
- Appendix C -MAC non-base processing areas
- Appendix D1 - MCS Edits
- Appendix D2 - FISS Edits
- Appendix D3 - VMS Edits

ACRONYMS

Acronym	Description
ARU	Automated Response Unit
BDS	Beneficiary Data Streamlining
CDS	Companion Data Services
CICS	Customer Information Control System
CMS	Centers for Medicare and Medicaid Services
COBC	Coordination of Benefits contractor
CPU	Central Processing Unit
CWF	Common Working File
CWFM	Common Working File Maintainer
DME	Durable Medical Equipment
DOB	Date of Birth
DPL	Distributed Processing Link
EDB	Enrollment Data Base
EDC	Enterprise Data Center
EXCI	External CICS Interface
FFS	Fee For Service
FISS	Fiscal Intermediary Shared System
FOIA	Freedom of Information Act
HCPCS	Healthcare Procedure Codes
HH	Home Health
HIC/HICN	Health Insurance Claim number
HICR	Health Information Correction Record
HIGIT	The last digit of the Social Security Number
HIGLAS	Healthcare Integrated General Ledger Accounting System

HIMR	Health Insurance Master Record
HMO	Health Maintenance Organization
HP	Hewlett Packard
I/O	Input / Output
IUI	Integrated User Interface
LBC	Local Beneficiary Cache
LBD	Local Beneficiary Store
LDC	Local Data Center
MAC	Medicare Administrative Contractor
MCS	Multi Carrier System
MSN	Medicare Summary Notice
MSP	Medicare Secondary Payer
OSA	Out of Service Area
QIO	Quality Improvement Organization
REPP	Representative Payee
RIC	Record Identification Code
SLA	Service Level Agreement
SS	Shared Systems
SSM	Shared System Maintainers
STC	Single Testing Contractor
TNIF	True Not in file
UAT	User Acceptance Testing
VDC	Virtual Data Center
VMS	VIPS Medicare System
VSAM	Virtual Storage Access Method
XREF	Cross Reference