

# **AGNIS Business Scenarios**

**Version 1.6**

<b>AGNIS</b>	Version: 1.7
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Table of Content

1.	INTRODUCTION	4
1.1	Purpose	4
1.2	Definitions, Acronyms and Abbreviations	4
1.3	References	5
2.	POSITIONING	5
2.1	Business Opportunity	5
2.2	Problem Statement	6
3.	RESOURCE DESCRIPTIONS	6
3.1	Resource Summary	6
3.2	Resource Profiles	7
3.2.1	Principal Investigator	7
3.2.2	Data Manager	7
3.2.3	IT Manager	7
3.2.4	Developer	7
3.2.5	Data Analyst	8
3.2.6	Subject Matter Expert (SME)	8
4.	AGNIS OVERVIEW	8
4.1	Current AGNIS Status	10
5.	AGNIS Implementation Scenarios	10
5.1.1	Scenario 1 – Integrated AGNIS Complete Forms	11
5.1.2	Scenario 2 – Integrated AGNIS Partial Forms	11
5.1.3	Scenario 2 – 3 <sup>rd</sup> Party Application employing AGNIS FIG 4	12
5.1.4	Scenario 3 – AGNIS Alone FIG 5	14
5.2	Summary of Capabilities	15
5.3	Assumptions and Dependencies	16
5.4	Cost and Pricing	17
5.5	Licensing and Installation	19
5.5.1	Licensing	19
5.5.2	Installation	19
6.	AGNIS PRODUCT FEATURES	19
6.1	Semantic Interoperability	19
6.2	Syntactic Interoperability	19
6.3	Security	19
7.	RISKS	19

AGNIS	Version: 1.7
Business Scenarios	Date: 2013-04-18

# Business Implementation Scenarios

## 1. INTRODUCTION

AGNIS®, A Growable Network Information System, is an open source web service which communicates hematopoietic stem cell transplant data using a secure standards based system. AGNIS eliminates duplicate data entry activities because data will enter the electronic network once, with AGNIS facilitating subsequent distribution and synchronization between databases. AGNIS software, distributed under a public license at [www.agnis.net](http://www.agnis.net), can be installed at a participating node in an AGNIS network. However, AGNIS implementation requires more resources than just software. AGNIS has been developed using and building upon open source tools available from the National Cancer Institute's (NCI) caBIG™ effort and other well supported projects such as the Globus Toolkit.

Data transmitted via AGNIS is defined as Case Report Forms (CRF's) in the metadata repository operated by the National Cancer Institute Center for Biomedical Informatics and Information Technology (NCI CBIIIT), known as the Cancer Data Standards Registry and Repository (caDSR). This is an ISO/IEC 11179 compliant metadata repository.

The sponsors of AGNIS are the National Marrow Donor Program (NMDP) and the Center for International Blood and Marrow Transplant Research (CIBMTR). The sponsors collaboratively facilitate multi-center research in hematopoietic stem cell transplantation (HSCT) through systematic prospective data collection and through sponsorship/management of multi-center clinical trials. More than 450 HSCT programs, many with their own electronic databases, submit data to the databases of NMDP or CIBMTR. These programs comprise the target user base of AGNIS.

### 1.1 Purpose

The purpose of this document is to describe possible patterns for adoption of AGNIS, and to describe the resources and efforts involved for these possible patterns of adoption.

### 1.2 Definitions, Acronyms and Abbreviations

Acronym	Definition
AGNIS®	A Growable Network Information System
caDSR	cancer Data Standards Repository, a metadata repository created by the National Cancer Institute
caBIG™	cancer Biomedical Informatics Grid, a National Cancer Institute initiative to link researchers with their data
CDE	Common Data Element – reference to a metadata element in caDSR
EMR	electronic medical record
HSC	hematopoietic stem cell
HCT	hematopoietic cell transplantation
IDE	integrated development environment

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

NCI	National Cancer Institute
NIH	National Institutes of Health
PI	principal investigator
SME	subject matter expert
QA	quality assurance
IT	Information Technology
BMT	Bone Marrow Transplant

### 1.3 References

- Introduction to AGNIS presentation: [www.CIBMTR.org](http://www.CIBMTR.org)
- AGNIS project web site: <http://agnis.net>, documents available are:
  - AGNIS Quick Start – describes technical configuration and setup
  - Presentation on CDEs, and FormBuilder “Accessing AGNIS Metadata using the caDSR”.
  - AGNIS Data Dictionary – describes the structure of the AGNIS staging database and AGNIS messages
  - AGNIS Data Submission – describes patterns used to submit data to AGNIS and the return messages
  - AGNIS Certification – briefly describes the effort involved to submit data through AGNIS, more complete information is in this document
- AGNIS Google Group: <http://groups.google.com/group/agnis?hl=en>
- cancer Bioinformatics Grid (caBIG): <https://cabig.nci.nih.gov/>
- cancer Data Standards Repository (caDSR): [http://ncicb.nci.nih.gov/NCICB/infrastructure/cacore\\_overview/cadsr](http://ncicb.nci.nih.gov/NCICB/infrastructure/cacore_overview/cadsr)

## 2. POSITIONING

### 2.1 Business Opportunity

AGNIS offers participating programs (this could be a transplant centers or other registries) a way to electronically exchange data with CIBMTR while avoiding the pitfalls of entering data into multiple systems. AGNIS is fully compliant with the FDA’s title 21 code of federal regulations (21 CFR part 11) covering electronic records and dealing with medical records. AGNIS exchanges data using standardized data elements created using the National Institutes of Health’s caBIG™ initiative. CIBMTR and NMDP are working with NIH to create a publically available data dictionary of HSCT terms for use by the international transplant community.

AGNIS works in conjunction with the FormsNet 3 application. FormsNet 3 provides data validation, audit trails and data storage. AGNIS is a vehicle which securely delivers the form data and returns status messaging from FormsNet 3.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

## 2.2 Problem Statement

The problem of	Electronic submission of patient HCT data to CIBMTR
affects	Participating programs who submit data to CIBMTR
the impact of which is	Programs must enter HCT data into multiple systems. In some cases having to hire additional staff.
a successful solution would be	Enter data once, use often. Reduce keying errors and data discrepancies. Reduce staff overhead for some programs.

## 3. RESOURCE DESCRIPTIONS

### 3.1 Resource Summary

Except where noted, the resources listed are funded by and receive work direction from the participating program. AGNIS resources at the CIBMTR and NMDP will be involved in any effort to adopt AGNIS, providing assistance where possible, but they are not directly responsible for deliverables associated with the participating program's effort.

Name	Description
Principal Investigator (PI)	The PI is the project sponsor and is responsible for ensuring that the project has the necessary resources to succeed.
Data Manager	The data manager is responsible for collecting and entering the data.
IT Manager	Responsible for managing the resources for the project.
Developer	Responsible for the analysis, development and maintenance of the link between the transplant program based electronic system or HCT program database and AGNIS.
Data Analyst	The Data Analyst is the bridge between the developer and the SME. This person is responsible for the data mapping.
Subject Matter Expert (SME)	Expert in medical definitions. Works with data analyst on mapping transplant program database to caDSR CDEs.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

### 3.2 Resource Profiles

#### 3.2.1 Principal Investigator

<b>Description</b>	The principal investigator is the project sponsor of any effort to adopt AGNIS.
<b>Type</b>	Not a user of AGNIS. Low technical knowledge.
<b>Responsibilities</b>	Sponsoring the project and ensuring adequate resources are available to successfully complete the objectives.
<b>Success Criteria</b>	Successful completion of the project within timelines and budget.
<b>Involvement</b>	Sponsor.
<b>Deliverables</b>	None.
<b>Comments / Issues</b>	Provides oversight and direction to the project team.

#### 3.2.2 Data Manager

<b>Description</b>	The data manager is responsible for collecting and entering the data.
<b>Type</b>	Indirect user of AGNIS. Low technical knowledge.
<b>Responsibilities</b>	May work with IT Manager and developer to define transplant program system. May also work with Data analyst on mapping.
<b>Success Criteria</b>	Being able to enter data into one system. Exploit single data entry for subsequent data submission and uses.
<b>Involvement</b>	End user.
<b>Deliverables</b>	None.
<b>Comments / Issues</b>	None.

#### 3.2.3 IT Manager

<b>Description</b>	Responsible for managing the resources for the project.
<b>Type</b>	Not a direct user of AGNIS. High technical knowledge.
<b>Responsibilities</b>	Works with developer and others to define and create transplant program system.
<b>Success Criteria</b>	Being able to exchange data to CIBMTR and receive appropriate messages via AGNIS.
<b>Involvement</b>	Project manager, assignment, management of IT staff assigned to the project
<b>Deliverables</b>	In-house EMR system upgrades to support AGNIS, or AGNIS set-up.
<b>Comments / Issues</b>	None.

#### 3.2.4 Developer

<b>Description</b>	Responsible for the analysis, development and maintenance of the link between the transplant program system and AGNIS.
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<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

<b>Type</b>	High technical knowledge including web services, Java or .Net.
<b>Responsibilities</b>	Works with others to define and create transplant program system. Works with SME to set up database mappings.
<b>Success Criteria</b>	Being able to exchange data to CIBMTR and receive appropriate messages via AGNIS.
<b>Involvement</b>	Programmer/Analyst
<b>Deliverables</b>	Transplant program system upgrades and AGNIS set-up.
<b>Comments / Issues</b>	AGNIS is technology independent, depending on the technology currently in use at the transplant program it can be implemented using either JAVA or .Net.

### 3.2.5 Data Analyst

<b>Description</b>	The Data Analyst is the bridge between the developer and the SME.
<b>Type</b>	Not a direct user of AGNIS. Medium to high technical knowledge, with in depth knowledge of the data stored in the HCT database.
<b>Responsibilities</b>	Works with SME to map data to caDSR CDEs.
<b>Success Criteria</b>	Successful mapping of transplant program data to caDSR CDEs.
<b>Involvement</b>	Data analyst.
<b>Deliverables</b>	Data mappings from HCT database to caDSR CDEs.
<b>Comments / Issues</b>	Close collaboration with SME.

### 3.2.6 Subject Matter Expert (SME)

<b>Description</b>	Expert in medical definitions. Works with developer on mapping transplant program data to caDSR CDEs.
<b>Type</b>	Not a direct user of AGNIS. Low technical knowledge. Most likely a medical professional such as a BMT nurse or doctor.
<b>Responsibilities</b>	Works with data analyst to map transplant program data to caDSR CDEs, answers questions, interprets the definitions of CDEs, and makes value judgments regarding the meaning of data within the HCT system
<b>Success Criteria</b>	Successful mapping of transplant program data to caDSR CDEs.
<b>Involvement</b>	Subject matter expert.
<b>Deliverables</b>	Decisions on data mapping issues and questions, and evaluation of data mapping deliverable
<b>Comments / Issues</b>	CIBMTR and AGNIS resources are available for consultation.

## 4. AGNIS OVERVIEW

AGNIS®, or A Growable Network Information System®, began as an idea to transmit hematopoietic stem cell transplant data between organizations but developed into a standards based communications model.



<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

Originally intended to be built upon an existing messaging system, analysis of the National Institutes of Health (NIH) **cancer Bioinformatics Grid (caBIG™)** project made a strong case for using their tools. caBIG is becoming a recognized leader in creating standards for grid computing and data definition. Their mission to connect the cancer community to accelerate research discoveries and improve patient outcomes fits the purpose of AGNIS, which is the implementation of clinical data exchange across the HSCT community to decrease the time it takes for patient follow-up data to be available for research.

The AGNIS certification process is intended to help guide a transplant center interested in using AGNIS. In order to submit form data to FormsNet 3 through AGNIS in the Submitter Role, a transplant center would first need the approval of their data management group to proceed.

AGNIS is not a turn key system, if a transplant center has the data required on forms within their own systems, a development effort is required at the transplant center to access that data and format it for submission through ANGIS.

Throughout the transplant center development there should be a working partnership between the AGNIS team at NMDP and the application development staff at the transplant center. There are AGNIS environments available for testing data submission, and with logging, AGNIS staff can monitor the success of data submission.

A center is expected to demonstrate success by submitting test forms to the AGNIS test environment in the course of their development effort prior to data submission to the AGNIS production environment. While there currently isn't a formal criterion defined, we expect to work closely with transplant centers during this phase of their development.

The intent is that when a center has completed their development and testing effort they will be granted access to the AGNIS production environment and will be authorized to submit FormsNet 3 form data through AGNIS.

Figure 1 illustrates the full data path with data entry into the transplant program based electronic system.

1. Data are entered in the transplant program system, which are then translated into caDSR common data elements (CDEs) and transmitted over the Internet to the secure NMDP AGNIS web service. Note that the exact format of the AGNIS message and the CDEs for forms can be found in other reference materials, see the References in section 1.3.
2. The data is received by NMDP AGNIS and translated from CDEs to the local format. The FormsNet™ 3 application then performs field- and form- level validation on the data and stores forms data in the FormsNet 3 database. FormsNet 3 AGNIS returns the result of the validation back to the submitter. Forms can be completed within FormsNet 3 via AGNIS, however if there is form data not represented in the transplant program system it can be entered directly into FormsNet 3 following form submission through AGNIS to complete the form. Once the form is complete, the form data are extracted from the FormsNet 3 database. Form data is translated into caDSR common data elements (CDEs). The form data is then stored in the AGNIS repository database.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

- The CIBMTR or the Transplant program's AGNIS Client requests the newly completed form data. This is retrieved from the AGNIS Server (where it was previously published by FormsNet 3). The data is returned to the CIBMTR or the Transplant center into a data structure like the AGNIS repository. The receipt of data is acknowledged by the requesting party. Currently CIBMTR pulls the newly completed form data on a regular basis. The data is then mapped to the observational database (including data maintained for the SCTOD) to create a record by patient and transplant. Aggregated data is given to the government for public use in fulfillment of the requirements of the SCTOD.

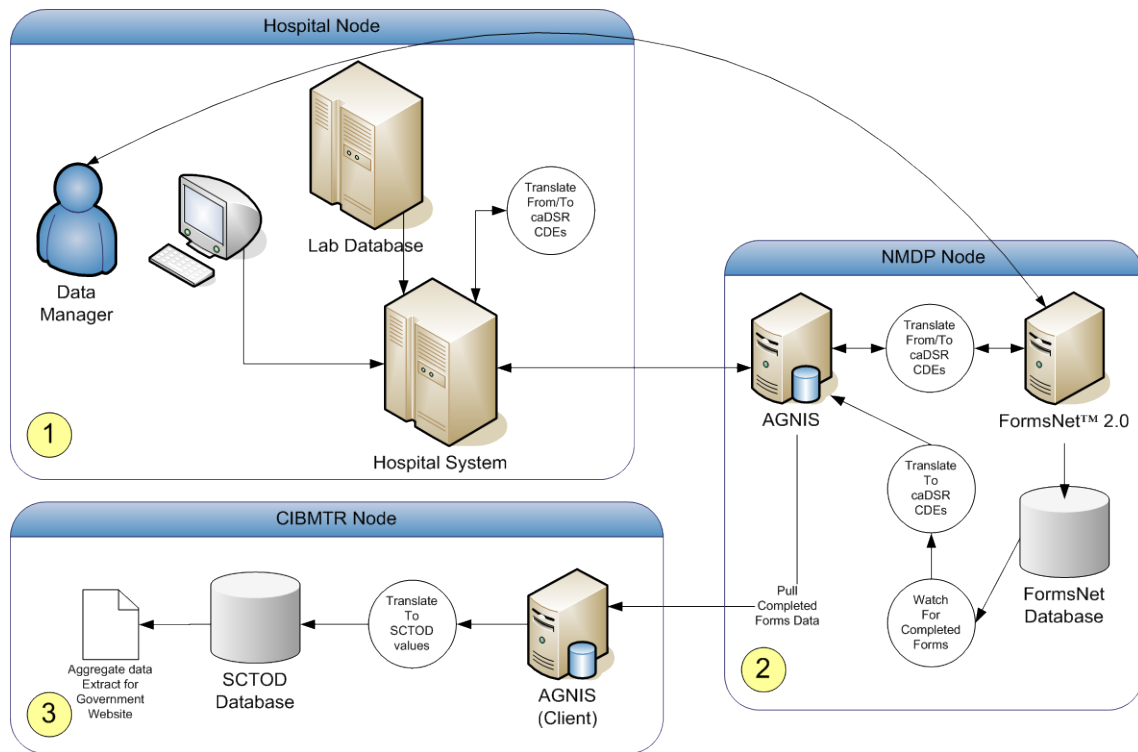


figure 1

#### 4.1 Current AGNIS Status

AGNIS is still under development. AGNIS currently supports submission of 15 forms. AGNIS also supports these same forms in a development environment available for transplant program use. AGNIS supports retrieval of these forms as well. Support for additional forms will be added over time. The current list of AGNIS supported forms can be found on [www.AGNIS.net](http://www.AGNIS.net) in News or on the AGNIS Google Group on the Form Status page.

### 5. AGNIS Implementation Scenarios

These are AGNIS implementation scenarios. While there are several ways to submit data using AGNIS, this document records the expected common usage of four main use cases. Regardless of the use case, all expect data to be entered into the transplant program based electronic system (either manually or via electronic integration with other systems (e.g. lab systems)), an HCT program database, or FormsNet™ 3system. Data entered into the transplant program based electronic system or another database will feed over to FormsNet 3 by way of AGNIS for validation. Completed data is then available to the HCT program-based systems and to CIBMTR.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

### 5.1.1 Scenario 1 – Integrated AGNIS Complete Forms

The first scenario is referred to as Integrated AGNIS completed form. The transplant program database may incorporate connections to EMRs and/or laboratory data systems. The AGNIS data elements, which are specified in the NCI’s caDSR (National Cancer Institute’s cancer Data Standards Repository), must be specifically mapped into the transplant program database. The mapping task is reduced or eliminated by adopting some or all of the AGNIS-defined data elements in the high-end databases. Note that Scenario 1 and 2 are not mutually exclusive, depending on the completeness of data in the program database the approach can change by form.

1. The data manager enters patient data into the transplant program based electronic system. The system then takes this data, maps it to the appropriate CIBMTR form and submits the data via AGNIS to FormsNet 3.
2. AGNIS receives the data and translates the form data to FormsNet 3 values. FormsNet 3 then validates the form and returns a status to AGNIS that is then communicated back to the transplant program. The data is also stored in the FormsNet 3 database.

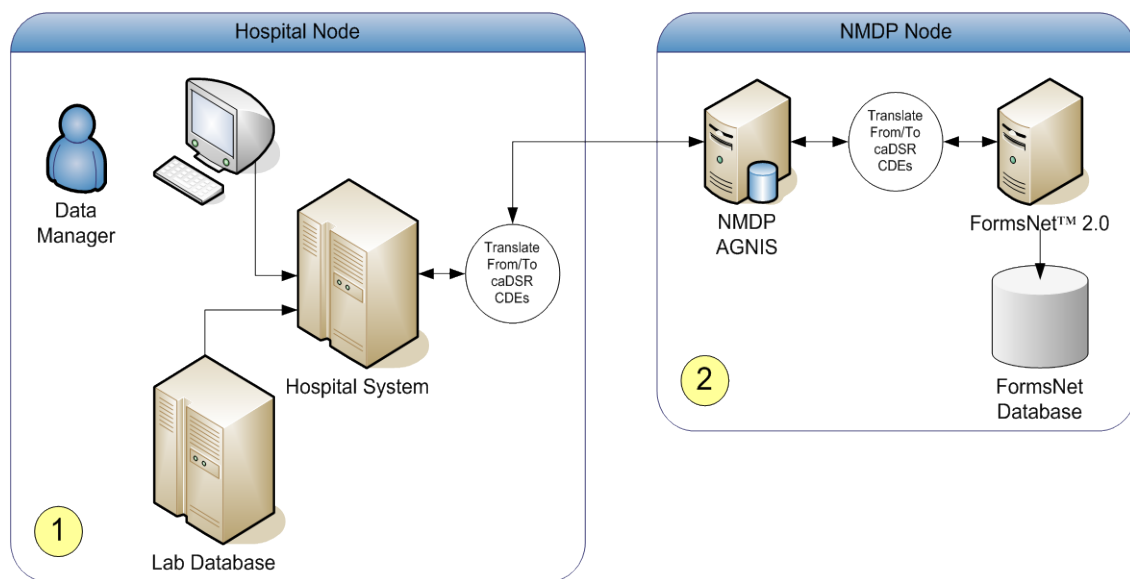


figure 2 – Scenario 1

### 5.1.2 Scenario 2 – Integrated AGNIS Partial Forms

The second scenario is referred to as Integrated AGNIS partial forms. The transplant program database does not contain all of the data required to complete a FormsNet 3 form. For the data that is stored in the transplant program database, the AGNIS data elements, which are specified in the NCI’s caDSR (National Cancer Institute’s cancer Data Standards Repository), must be specifically mapped into the transplant program database. Note that Scenario 1 and 2 are not mutually exclusive, depending on the completeness of data in the program database the approach can change by form.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

1. The data manager enters data into the transplant program based electronic system. The system then takes this data, maps it to the appropriate CIBMTR form and submits the data via AGNIS to FormsNet 3.
2. AGNIS receives the data and translates the form data to FormsNet 3 values. FormsNet 3 then validates the form and returns a status to AGNIS indicating that the form is accepted with errors indicating that it has not been completed with the initial submission. The status is then communicated back to the transplant program. The data is also stored in the FormsNet 3 database.
3. The data manager then accesses FormsNet 3 and completes the form by entering the data that was not submitted through AGNIS.
4. Care should be taken with this approach to ensure that the data submitted through AGNIS is retained in FormsNet 3 or if changed through FormsNet 3 the corresponding data is also changed (converted) in the transplant program system.

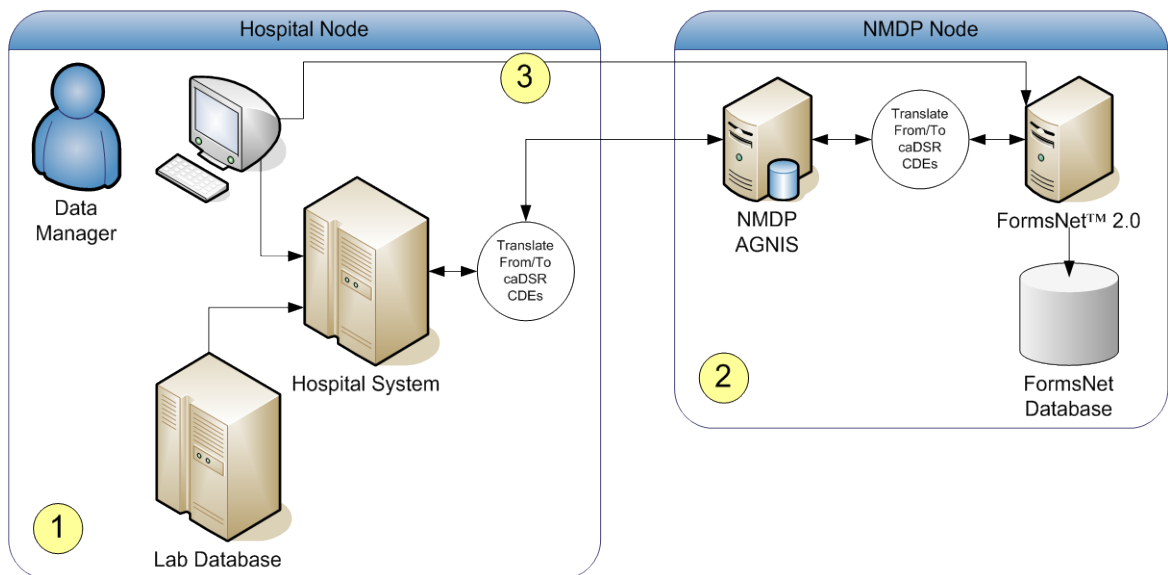


figure 3 Scenario 2

### 5.1.3 Scenario 2 – 3<sup>rd</sup> Party Application employing AGNIS FIG 4

The third scenario is a 3<sup>rd</sup> Party application employing AGNIS (referred to as 3<sup>rd</sup> Party AGNIS). In this model, the HSC transplant program has purchased a 3<sup>rd</sup> party database system that incorporates AGNIS communications. Data mapping at the local program is not necessary because this step is incorporated into the 3<sup>rd</sup> party offering. Connectivity to EMRs or laboratory database systems is limited, unless programmed by the 3<sup>rd</sup> party database vendor/consultants as part of the installation. However, the transplant program benefits from a local database system with built-in reporting and analysis features, as well as the capability for adding relevant local data, e.g., referring physician contacts. This model is being pursued by several software firms.

There are two ways that 3<sup>rd</sup> party vendors are choosing to implement their solution. The first solution is shown in figure 4a.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

1. The data manager enters data into the web-based FormsNet 3 application.
2. Completed and error free form data is stored in the AGNIS database for retrieval.
3. The transplant program 3<sup>rd</sup> party vendor software retrieves the completed form data on a regular basis and populates the 3<sup>rd</sup> party database. The data is then available for use by the transplant program.

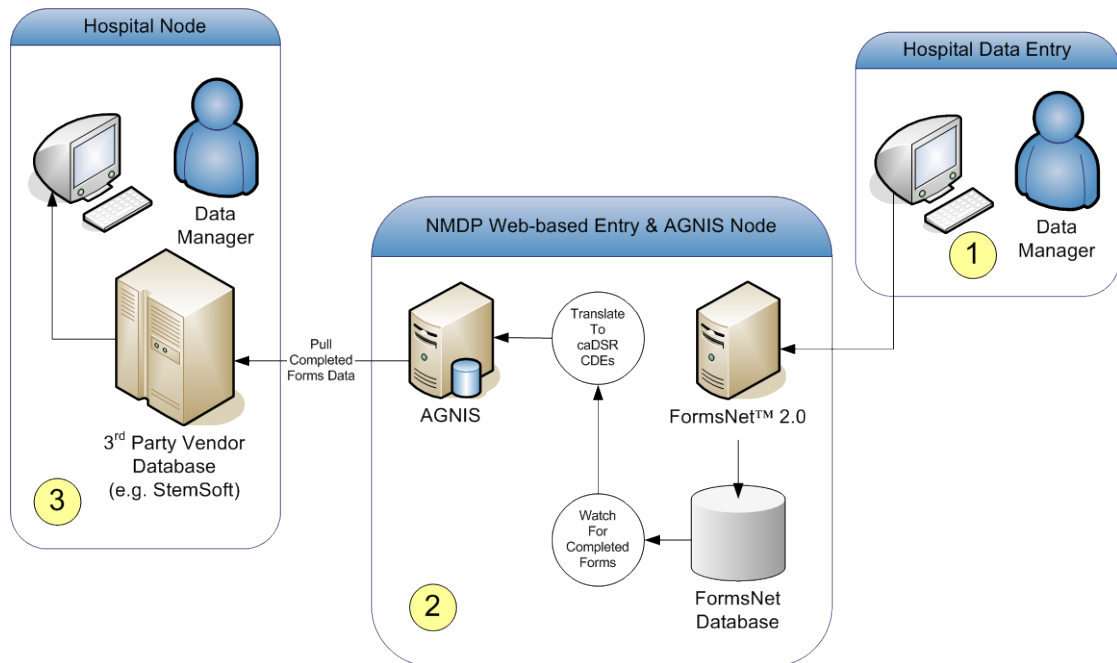


figure 4a

The second vendor solution is shown in figure 4b.

1. The data manager enters data into the 3rd party application at the transplant program.
2. Form data is then submitted to CIBMTR via the AGNIS mechanism build into the 3rd party application.
3. The transplant program does not need to retrieve data back from CIBMTR as their data remains in their local 3rd Party system. However, this option remains open in case there is a need.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

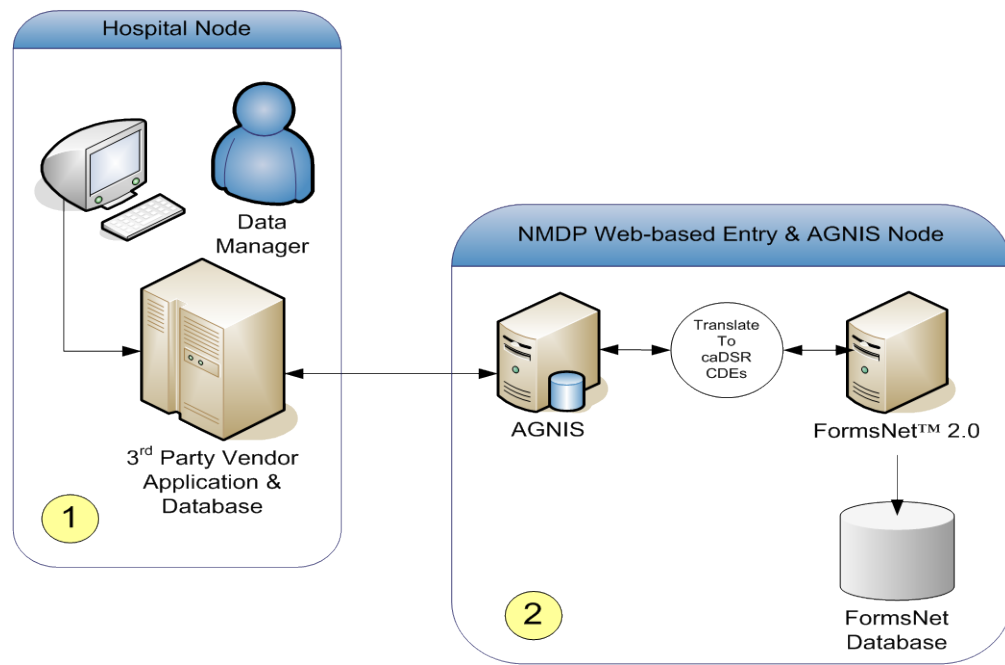


figure 4b

#### 5.1.4 Scenario 3 – AGNIS Alone FIG 5

The third scenario is AGNIS alone. In this model, the AGNIS node at the HSC transplant program serves as the program's local database, primarily receiving data that have been entered centrally. This model is the least expensive and probably least flexible for the local program. It requires AGNIS enhancements that remain under development, including a reporting database and tools for administration, editing and limited queries.

1. The data manager enters data into the web-based FormsNet 3 application.
2. Completed and error free form data is stored in the AGNIS database for retrieval.
3. The transplant program retrieves the completed form data on a regular basis and populates their local AGNIS database. The data is then available for use by the transplant program.
4. This scenario requires further development by the AGNIS team and would not be implementable until mid in 2010.

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

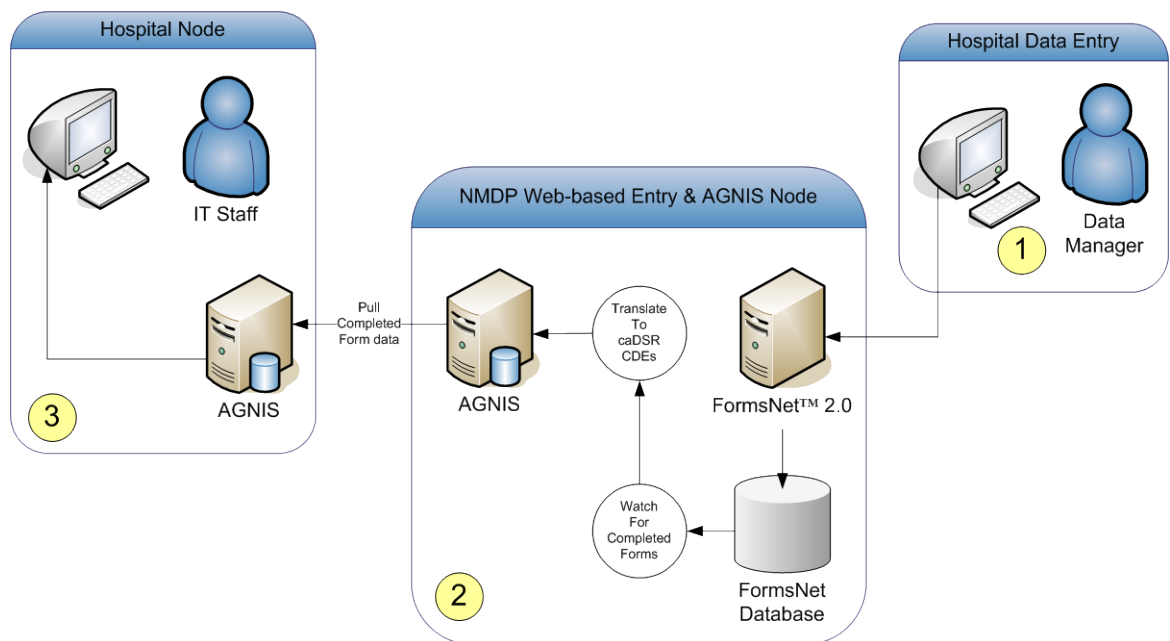


figure 5

## 5.2 Summary of Capabilities

Key: 1 = Integrated AGNIS, 2 = 3<sup>rd</sup> Party AGNIS, 3 = AGNIS Alone

Customer Benefits	Supporting Features	1	2	3	4
Data Managers enter data once.*	Data that is entered into the transplant program based electronic system is then transmitted via AGNIS to the FormsNet 3 application or data is entered into the 3 <sup>rd</sup> party system.	x	x	x	x
Data Managers enter data into a single system	Only one system is used for data entry, be it the transplant program based system, FormsNet 3 or a 3 <sup>rd</sup> party system.	x		x	x
The program receives instant feedback.	Once the form data is validated by FormsNet 3 a message with any validation errors is returned by AGNIS to the transplant program based electronic system.	x	x	x	
As data is updated in the Transplant program EMR system it can then update FormsNet 3.	Even when a form is complete, updates can be sent from the transplant program to keep the transplant program based electronic system and FormsNet 3 systems in synchrony.	x	x		

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

Approach that offers the program the most control.	The transplant program controls what is sent and viewed by their staff. Maintains a database on the front end of the data exchange that is not dependent upon other entities, and which can be programmed most flexibly for the needs of the center.	x	x		
The program gains all of the features of the FormsNet 3 application. Don't they also get these with #1, though they may be less relevant	FormsNet 3 provides instant data validation, real time forms due information and the ability to save incomplete forms among other features.		x	x	x
Completed forms data is extracted back and used to populate the transplant program's/program's 3 <sup>rd</sup> party database. (only scenario 2B)	Using AGNIS, the 3 <sup>rd</sup> party vendor will extract completed forms data submitted by the transplant program and use it to populate the transplant program's local 3 <sup>rd</sup> party system.			x	
This approach is appealing to programs that prefer a 3 <sup>rd</sup> party option.	Both FormsNet 3 and the 3 <sup>rd</sup> party product are not maintained by the transplant program.			x	
Completed forms data is extracted back and used to populate the transplant program's local AGNIS database.	The transplant program will extract completed forms data previously submitted by the transplant program and use it to populate the transplant program's local AGNIS database.			x	x
This approach is appealing to programs that are looking for a quick way to get their completed forms data back.	The local AGNIS database can be used as a staging database which can be used to populate data into a more robust format for reporting, statistical and other purposes.				x

- As products vary when using 3<sup>rd</sup> party applications, please verify with your vendor.
- The use of "x" indicates partial or complete

### 5.3 Assumptions and Dependencies

The following is a list of assumptions that need to be followed in order to have a successful AGNIS implementation.

Key: 1 = Integrated AGNIS, 2 = 3<sup>rd</sup> Party AGNIS, 3 = AGNIS Alone

Assumption	1	2	3	4
All software prerequisites will be met as outlined in section one of the "AGNIS Quick Start Guide" available in the "Documentation" section of the agnis.net website. The URL is: <a href="http://www.agnis.net/DOCUMENTATION/docs/AgnisQuickStart.pdf">http://www.agnis.net/DOCUMENTATION/docs/AgnisQuickStart.pdf</a>	x	x		x



<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

Successful installation of AGNIS will be completed as outlined in sections two – nine of the “AGNIS Quick Start Guide”.	x	x		x
The transplant program has dedicated IT staff to download, install, test, deploy and maintain their AGNIS system.	x	x		x
The transplant program has dedicated IT staff to maintain their 3 <sup>rd</sup> party system (if applicable).			x	
The transplant program has resources to perform data mapping between their legacy database and AGNIS common data elements (CDEs). This usually involves a medical expert (BMT doctor or nurse).	x	x		x
The transplant program’s third party vendor is actively involved with the AGNIS project and has been certified to submit or retrieve data to AGNIS.			x	
The transplant program has dedicated IT staff to upgrade their electronic system to work with AGNIS.	x	x		
Will have access to Subject Matter Expert (SME) for data mapping.	x	x		x

## 5.4 Cost and Pricing

The following estimations are guidelines only and are to give an idea of the size and potential cost of implementing and AGNIS solution. As costs for hardware and staff vary widely it is essential to use your site’s true resources and costs to gain an accurate overall picture.

### Data Mapping

Data mapping includes matching AGNIS Common Data Elements (CDEs) with columns in the program’s legacy database. A rule of thumb assumed for generating these projections is that one knowledgeable person can map ten questions per business day. The time that it will take to perform data mapping cannot be stressed enough. This will be the most time consuming part of the project. It is suggested that forms be prioritized by the number of forms submitted so that the form that is submitted the most is mapped first. However, it is generally recognized that it is simpler to work with a small form first before attempting a larger, more complex form.

The chart below shows the total number of CDEs on these forms, an assessment of the number of fields available through the program’s HCT is an important step to estimate the effort involved.

The cost below assumes a total compensation package of \$65 per hour and assumes one person working on the mapping for an eight hour day. Only available fields need to be mapped if the plan is to implement scenario 2 possible as the data manager is able to go into FormsNet 3 to finish the form.

Form	# of CDEs	Days to map*	Cost†
Pre-TED (2400)	316	32	\$16,640
Post-TED (2450)	106	11	\$5,720
IDM (2004)	48	5	\$2,600
HLA (2005)	81	8	\$4,160
Infusion (2006)	217	22	\$11,440

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

Death (2900)	24	3	\$1,560
Baseline (2000)	297	30	\$15,600
100 Day Post-HSCT Follow-up (2100)	461	46	\$23,920
6 month – 2 year Post-HSCT Follow-up (2200)	400‡	1	\$520
> 2 yr Post-HSCT Follow-up (2300)	334	.3	\$156

\* Assumes one person mapping ten CDEs per business day, † At \$65 per hour for one person, ‡ If 2100 is mapped then there are only 14 additional fields to map, § If 2100 is mapped then there are only 3 new fields to map.

### Resource Costs

IT resource costs will vary widely depending on implementation solution. The following is to give you a general idea of costs to consider when determining which solution will work best for your organization. Some of this may be in place and would not be new cost incurred to implement AGNIS.

Key: 1 = Integrated AGNIS, 2 = 3<sup>rd</sup> Party AGNIS, 3 = AGNIS Alone

Resource	Cost	1	2	3	4
Internet connect (Broadband recommended)	Varies by plan	x	x	x	x
PC(s)	\$1,200 per workstation	x	x	x	x
Transplant program Based Electronic System	Varies by implementation	x	x		
3 <sup>rd</sup> Party BMT System	Varies by vendor			x	
Servers for AGNIS submission and/or retrieval - development server - QA server - system test server - production server	Starting at \$350 a piece for a tower; \$650 a piece for a rack server. Operating system may be included in cost.	x	x		x
Database server for staging submitted forms		x	x	?	
Storage, LAN based storage for data associated with systems and databases		x	x	?	x
Developer software (Java or .Net) such as an IDE and source control.	Java has open source solutions. .Net must be purchased. Costs vary.	x	x		x
Developer(s)	\$65 per hour	x	x		x
Subject Matter Expert(s)	\$85 per hour	x	x		x
QA	\$85 per hour	x	x		x
System Administrator	\$65 per hour	x	x		x

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

## 5.5 Licensing and Installation

### 5.5.1 Licensing

AGNIS is open source and made available free of charge. Source code can be downloaded at:

<http://agnis.net>

The complete open source licensing agreement should be read and understood. It is available here:

[http://www.agnis.net/DOCUMENTATION/docs/AGNIS\\_LICENSE.txt](http://www.agnis.net/DOCUMENTATION/docs/AGNIS_LICENSE.txt)

Other software products will have their own licensing agreements. Please refer to the owner's documentation of the software product for further information.

### 5.5.2 Installation

Installation would include any hardware or software necessary to implement the system. Such as PCs, servers, AGNIS, operating systems, etc. Coordination between local network administrators will be required to complete AGNIS security setup.

## 6. AGNIS PRODUCT FEATURES

### 6.1 Semantic Interoperability

Facilitate accurate interpretation of transmitted data through unambiguous, comprehensive documentation of the data's meaning.

### 6.2 Syntactic Interoperability

Facilitate connectivity between disparate systems by using open, standardized, platform-neutral communication protocols.

### 6.3 Security

Protect integrity and confidentiality of data communications.

## 7. RISKS

1. Failure to meet important requirements such as:
  - a. Understanding, communicating and documenting clear project goals.
  - b. Realistic staffing levels with knowledgeable staff.
  - c. Developing realistic data mapping time lines.
  - d. Having direct and adequate access to Subject Matter Experts.

## Revision Document History

Date	Version	Description	Author
2008-11-03	1.0	Created document	Ken Bengtsson
2008-11-08	1.1	Updated document per review	Ken Bengtsson

<b>AGNIS</b>	Version: 1.7
Business Scenarios	Date: 2013-04-18

2009-05-07	1.2	General updates	Barb Kramer
2010-01-28	1.5	Updated per review	Barb Kramer
2013-03-16	1.6	General updates	Shawn Freeman
2013-04-18	1.7	General updates	Shawn Freeman