NFM Ballistic System Documentation

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1 Introduction

1.1 Overview

The NFM Ballistic System (NBS) is a system designed for gathering and managing data from laboratory ballistic tests. Historically, the test results were recorded manually in Excel spreadsheets and transferred via pendrives, which presented several challenges, including data inconsistency, lack of centralized access, and potential data loss. Recognizing the need for a more robust solution, it was decided to develop a dedicated system for managing ballistic test data.

1.2 System Components

The system comprises three main components:

- Construction Creator App: An application used by ballistic engineers to design ballistic constructions.

- Test Logging Interface: A user interface for recording test data and results directly into the system.

- Power BI Workspace: A dedicated workspace for analyzing the collected data and creating Power BI dashboards.

1.3 Challenges

The NBS system faces several challenges:

- **Data Inconsistency**: The data stored within the system is messy and lacks uniformity, making it difficult and time-consuming to analyze.

- **Poor Documentation**: The system is not documented, making it challenging for new users to understand its structure. The only available documentation is from 2019 and the system has changed considerably by now.

- **Overall Complexity**: The system's design and architecture are complex and difficult to navigate, which complicates maintenance and further development.

1.4 Project Goals

The primary goals for this project include:

1. **System Exploration**: Thoroughly explore and analyze the NBS system to understand its structure, the tables where data is stored, the solutions utilized and Power BI reports used for data analysis.

2. **Data Quality Analysis**: Perform quality analysis on the available data to asses the data and its usefulness.

3. **Documentation**: Document my findings, providing an overview of the system as it currently stands.

4. **Recommendations**: Provide some recommendations for the nearest future.

2 System Exploration and Findings

This section summarizes the exploration process, focusing on understanding the structure, tables, and solutions used in the NBS system.

2.1 Overview

To fully understand the current state of the system, an exploration of its structure, components, and data was conducted. This section provides an in-depth look at the findings from the exploration, focusing on tables, solutions, and Power BI reports that make up the system.

The exploration began with an analysis of tables within NBS. They were examined to understand their structure, the relationships between them, and the quality of the data they contain. Additionally, the system's solutions were reviewed and listed.

Furthermore, the exploration included a review of the Power BI reports used to visualize the data. Along with tables and solutions, these reports were also comprehensively inventorized.

This section includes a detailed inventory of the tables, solutions, and reports. These findings serve as the foundation for the subsequent analysis, providing a clear picture of the NBS components.

2.2 Tables

The tables used in the NBS system are referred to as "entities." In the Microsoft Dataverse structure, each entity has a logical name (the actual name of the entity) as well as a display name, which is user-friendly and displayed in the application frontend.

While exploring the system, it appeared that tables related to NBS often start with one of the following prefixes: `cr675_`, `cr91b_`, or `craab_`. As the Microsoft Dataverse API returns a list of all tables, these prefixes served as flags when identifying which tables could be related to NBS. This approach narrowed down the search from hundreds of tables to several dozen.

Another indication of which tables were in use was the `Data Analyzer` Power BI report.

2.2.1 List of Tables

This is a list of tables used by NBS. The end user will probably recognize the tables by their display name; however, when programmatically exploring the data, the logical name is used to identify tables.

Display Name	Logical Name
NBS Test Action	cr675_testdashboardtestprocedment
IFS MATERIALS V3	cr675_ifsmaterialsv3
NBS Construction Material Stacks Stitchings	cr675_nbsconstructionmaterialstacksstitchings
NBS IFS MATERIALS	cr675_nbsifsmaterials
NBS Material stack	cr675_nbsmaterialstack
NBS Sample	cr675_testdashboardsample
NBS Test Compound	cr675_testcompounds
NBS Test Order	cr675_testorder
NBS ICW Products	cr675_nbsicwproducts
NBS R Table	cr91b_nbsrtable
NBS Ballistic System	cr675_testdashboardballisticsystem
NBS Construction	cr675_nbsconstruction
NBS Product	cr675_testdashboardproduct
NBS FREC2 RND Orders	cr675_nbsfrec2rndorders
NBS Operation	cr675_nbsstitching
NBS Material	cr675_nbsmaterial
NBS Test Protocol Template	cr675_testdashboardstandarddetails
NBS Bullet Type Dictionary	cr675_testdashboardammotypedictionary
NBS Project	cr675_project
NBS Geometry	cr675_testdashboardgeometries
NBS Group Order	craab_nbsgrouporder
NBS MaterialStackAndConstraction	cr675_nbsmaterialstackandconstraction
NBS Program	cr91b_nbsprogram
NBS Standard Names Dictionary	cr675_testdashboardstandard
NBS Preliminary Testing	cr675_nbspreliminarytesting
NBS Backing Type Dictionary	cr675_nbstestdashboardbackingtypedictionary
NBS Cartridge Type Dictionary	cr675_nbstestdashboardcartridgetypedictionary
NBS Institute	cr675_testdashboardinstitute
R&DOrderView	cr675_orderviewrd
NBS FRECII Tool Type	craab_nbstooltype
NBS Powder Type Dictionary	cr675_nbstestdashboardpowdertypedictionary
NBS Photo	cr675_testdashboardphotos

2.2.2 Entity Relationship Diagram

This is the Entity Relationship Diagram of the main tables used in NBS. It provides a clear picture of the relationships between tables and can serve as a suggestion for which tables should be merged while preparing data for analysis.
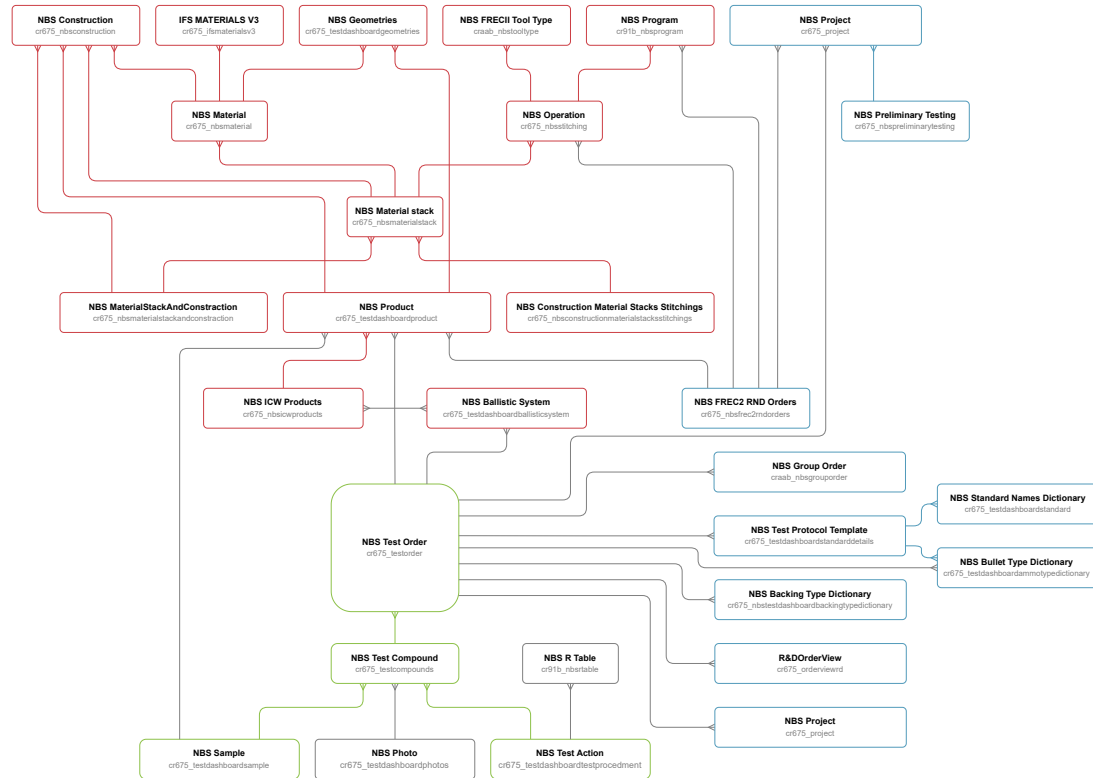
The diagram uses Barker's Notation for entity relationships. For reference see Barker's ERD Notation

Colors used in the diagram are used for logical grouping of tables:

- Tables related to materials/constructions are highlighted in red.

- Tables related to tests are highlighted in green.

- Tables which serve as dictionaries/indexes are highlighted in blue (these are the first ones to be merged when doing data preparation).

- Tables which are useless/obsolete are highlighted in gray.

2.2.3 Detailed Inventory of Tables

This section contains a detailed inventory of tables along with their row and column counts, relationships with other tables, and a list of their columns. To avoid cluttering the main document, I have chosen to show only columns with over 50% non-null values. The full inventory is available in the Appendices section in the form of a .json file, as well as a .pdf and its markdown .md source file.

Table: NBS Test Order

Logical name: `cr675_testorder`
Primary ID column: `cr675_testorderid`
Primary name column: `cr675_orderid`
Column count: 90
Custom column count: 72
Row count: 3394

Relationships

Many to One

Related table	Local column	Foreign column
`cr675_project`	`cr675_project_testorder`	`cr675_projectid`
`cr675_testdashboardballisticsystem`	`cr675_ballisticsystem`	`cr675_testdashboardballisticsystemid`
`cr675_orderviewrd`	`cr675_orderviewrd`	`cr675_orderviewrdid`
`account`	`cr675_institute`	`accountid`
`account`	`cr675_client`	`accountid`
`cr675_testdashboardammotypedictionary`	`cr675_nbsbullettypedict`	`cr675_testdashboardammotypedictionaryid`
`cr675_nbstestdashboardbackingtypedictionary`	`cr675_backingtypedictionary`	`cr675_nbstestdashboardbackingtypedictionaryid`
`cr675_testdashboardstandarddetails`	`cr675_standarddetail`	`cr675_testdashboardstandarddetailsid`
`systemuser`	`cr675_operator`	`systemuserid`
`systemuser`	`cr675_contactperson`	`systemuserid`
`cr675_testdashboardproduct`	`cr675_testdashboardproduct`	`cr675_testdashboardproductid`
`craab_nbsgrouporder`	`craab_nbsgrouporder`	`craab_nbsgrouporderid`

One to Many

Related table	Local column	Foreign column
`cr675_testdashboardtestedstandarddetail`	`cr675_testorderid`	`cr675_testorder`
`cr675_testcompounds`	`cr675_testorderid`	`cr675_testorder`

Many to Many

Related table	Local column	Foreign column
`cr675_testdashboardstandarddetails`	`cr675_testorderid`	`cr675_testdashboardstandarddetailsid`
`systemuser`	`cr675_testorderid`	`systemuserid`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Client	`cr675_client`	Lookup	True	100.00%
Institute	`cr675_institute`	Lookup	True	99.53%
NBS Project	`cr675_project_testorder`	Lookup	True	99.38%
BallisticSystem	`cr675_ballisticsystem`	Lookup	True	99.26%
NBS Bullet Type Dictionary	`cr675_nbsbullettypedict`	Lookup	True	97.17%
Backing Type	`cr675_backingtypedictionary`	Lookup	True	94.78%
NBS Group Order	`craab_nbsgrouporder`	Lookup	True	21.15%
Standard Detail	`cr675_standarddetail`	Lookup	True	12.70%
Operator	`cr675_operator`	Lookup	True	11.43%
Contact person	`cr675_contactperson`	Lookup	True	1.77%
R&D Order View	`cr675_orderviewrd`	Lookup	True	0.00%
NBS Product	`cr675_testdashboardproduct`	Lookup	True	0.00%
Result Of Test	`cr91b_resultoftest`	Picklist	True	100.00%
Order Status	`cr675_orderstatus`	Picklist	True	99.91%
Priority	`cr675_priority`	Picklist	True	99.47%
Bullet Type	`cr675_bullettype`	String	True	100.00%
Order Name	`cr675_orderid`	String	True	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
No Of Shoots	cr675_noofshoots	String	True	97.41%
Conditioning	cr675_conditioning	String	True	96.46%
Level of Protection	cr91b_levelofprotection	String	True	87.09%
BFS Requirement	cr91b_bfsrequirement	String	True	42.60%
ZK number	cr675_zknumber	String	True	37.89%
Panel size	cr91b_panelsize	String	True	33.65%
Sample Serial Numbers	cr675_sampleserialnumbers	String	True	32.73%
ZP number	cr675_zpnumber	String	True	30.61%
Report number	cr675_reportnumber	String	True	28.14%
Pattern	cr675_pattern	String	True	14.26%
R&D Notes	cr675_rdnotes	String	True	11.28%
Condition requirement	cr91b_conditionrequirement	String	True	5.86%
Shipment Tracking Info	cr675_shipmenttrackinginfo	String	True	2.00%
Root of test	cr675_rootoftest	String	True	0.85%
Backing Type	cr675_backingtype	String	True	0.27%
QA notes	cr675_qanotes	String	True	0.06%
SP Order ID	cr675_sporderid	String	True	0.00%
Standard Details Picker	cr675_standarddetailspicker	String	True	0.00%
Threat	cr675_threat	String	True	0.00%
Copy Test Order	cr91b_ballisticsystemcreator	String	True	0.00%
Product Creator	cr91b_productcreator	String	True	0.00%
Standard Picker	cr91b_standardpicker	String	True	0.00%
Test field	cr91b_testfield	String	True	0.00%
Test field1	cr91b_testfield1	String	True	0.00%
Additional Test Info	cr675_additionaltestinfo	Memo	True	54.21%
Reason for the priority	cr675_reasonforthepriority	Memo	True	27.78%
Notes	cr675_notes	Memo	True	3.89%
Sample Quantity	cr675_samplequantity	Integer	True	99.73%
Queue No	cr675_queueno	Integer	True	0.82%
Counter For Id	cr91b_counterforid	Integer	True	0.29%
V0	cr675_v0	Decimal	True	70.30%
V0 tolerance	cr675_v0tolerance	Decimal	True	49.59%
V50 Minimum Required	cr675_v50minimumrequiredvelocity	Decimal	True	12.85%
Bullet Mass	cr91b_bulletmass	Decimal	True	7.13%
Nom Velocity	cr91b_nomvelocity	Decimal	True	7.04%
V50 Target	cr675_v50targetenergy	Decimal	True	6.75%
Min Velocity	cr91b_minvelocity	Decimal	True	3.36%
Max Velocity	cr91b_maxvelocity	Decimal	True	3.24%
PBFS - Target	cr675_v50targetvelocity	Decimal	True	3.01%
PBFS - Tolerance	cr675_pbfsvelocitytolerance	Decimal	True	2.15%
Energy [J]	cr91b_energyj	Decimal	True	0.32%
Depth Of Cut Tolerance	cr675_depthofcuttolerance	Decimal	True	0.24%
IsShotTest	cr675_isshottest	Boolean	True	100.00%
Produced	cr675_produced	Boolean	True	100.00%
Shipped	cr675_shipped	Boolean	True	100.00%
Test Goal Type	cr675_testgoaltype	Boolean	True	100.00%
Test Origin Type	cr675_testorigintype	Boolean	True	100.00%
Test Result	cr675_testresult	Boolean	True	100.00%
Verified by QA	cr675_verifiedbyqa	Boolean	True	100.00%
IsHBTest	cr91b_depthofpenetrationinmm	Boolean	True	99.29%
IsNameGenerated	cr91b_isnamegenerated	Boolean	True	94.87%
Shipped Date	cr675_shippeddate	DateTime	True	40.72%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Deadline	cr675_deadline	DateTime	True	33.12%
Planned Shipping	cr675_plannedshipping	DateTime	True	27.31%
Received	cr675_received	DateTime	True	23.16%
Test Order	cr675_testorderid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.09%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	63.44%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Test Action

Logical name: `cr675_testdashboardtestprocedment`
Primary ID column: `cr675_testdashboardtestprocedmentid`
Primary name column: `cr675_id`
Column count: 47
Custom column count: 29
Row count: 33281

Relationships

Many to One

Related table	Local column	Foreign column
cr675_testcompounds	cr675_testcompounds	cr675_testcompoundsid
cr91b_nbsrtable	cr91b_nbsrtable	cr91b_nbsrtableid

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS Test Compounds	cr675_testcompounds	Lookup	True	92.45%
NBS R Table	cr91b_nbsrtable	Lookup	True	2.92%
Id	cr675_id	String	True	100.00%
Ammo Type	cr675_ammotype	String	True	98.58%
Cartridge Type	cr675_cartridgetype	String	True	87.09%
Powder Type	cr675_powdertype	String	True	33.06%
Threat	cr675_threat	String	True	0.01%
Stop in Layer	cr91b_stopinlayer	String	True	0.00%
Notes	cr675_notes	Memo	True	11.61%
Shot Pattern Reference Number	cr675_shotnumber	Integer	True	99.95%
Depth of Penetration	cr91b_depthofpenetration	Integer	True	0.10%
Bullet Speed	cr675_bulletspeed	Decimal	True	97.85%
Room Temperature	cr675_roomtemperature	Decimal	True	96.72%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Humidity	cr675_humidity	Decimal	True	96.62%
Muzzle Distance	cr675_muzzledistance	Decimal	True	90.38%
Angle	cr675_angle	Decimal	True	88.56%
Energy	cr675_energy	Decimal	True	46.72%
Depth Of Cut	cr675_depthofcut	Decimal	True	40.10%
Clay Temperature	cr675_claytemperature	Decimal	True	38.56%
Powder Weight	cr675_powderweight	Decimal	True	17.40%
Layers Penetrated	cr675_layerspenetrated	Decimal	True	8.58%
Diameter	cr675_diametr	Decimal	True	0.30%
Time Of Occurrence	cr675_timeofoccurence	Decimal	True	0.00%
Depth of Penetration [mm]	cr91b_depthofpenetrationmm	Decimal	True	0.00%
P-BFS	cr675_pbfs	Boolean	True	100.00%
Penetration Info	cr675_penetrationinfo	Boolean	True	100.00%
Shot Type	cr675_shottype	Boolean	True	100.00%
Test Action Type	cr675_testkind	Boolean	True	100.00%
Valid	cr675_valid	Boolean	True	100.00%
TestDashboard Test Procedment	cr675_testdashboardtestprocedmentid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	1.76%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: IFS MATERIALS V3

Logical name: `cr675_ifsmaterialsv3`
Primary ID column: `cr675_ifsmaterialsv3id`
Primary name column: `cr675_part_no`
Column count: 37
Custom column count: 19
Row count: 31374

Relationships

One to Many

Related table	Local column	Foreign column
cr675_nbsmaterial	cr675_ifsmaterialsv3id	cr675_ifsmaterialsv3

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NAME	cr675_name	String	True	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
PART_PRODUCT_FAMILY	cr675_part_product_family	String	True	100.00%
PART_PRODUCT_FAMILY_DESC	cr675_part_product_family_desc	String	True	100.00%
PART_STATUS	cr675_part_status	String	True	100.00%
PART_STATUS_DESCRIPTION	cr675_part_status_description	String	True	100.00%
PURCH_PART_SUPP_CURR	cr675_purch_part_supp_curr	String	True	100.00%
VENDOR_NO	cr675_vendor_no	String	True	100.00%
PART_NO	cr675_part_no	String	True	100.00%
PO unit	cr675_pounit	String	True	46.33%
PO DATES	cr675_podates	String	True	30.42%
DESCRIPTION	cr675_description	Memo	True	100.00%
CURR_RATE	cr675_curr_rate	Decimal	True	100.00%
PURCH_PART_SUPP_PLN	cr675_purch_part_supp_pln	Decimal	True	100.00%
PURCH_PART_SUPP_PRICE	cr675_purch_part_supp_price	Decimal	True	100.00%
PURCH_PART_SUPP_EUR	cr675_purch_part_supp_eur	Decimal	True	99.99%
PURCH_PART_SUPP_NOK	cr675_purch_part_supp_nok	Decimal	True	99.99%
PURCH_PART_SUPP_USD	cr675_purch_part_supp_usd	Decimal	True	99.99%
UNIT_COST_EUR	cr675_unit_cost_eur	Decimal	True	99.99%
PO AVG Price	cr675_poavgprice	Decimal	True	30.42%
IFS MATERIALS V3	cr675_ifsmaterialsv3id	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Construction Material Stacks Stitchings

Logical name: `cr675_nbsconstructionmaterialstacksstitchings`
Primary ID column: `cr675_nbsconstructionmaterialstacksstitchingsid`
Primary name column: `cr675_name`
Column count: 27
Custom column count: 9
Row count: 13606

Relationships

Many to One

Related table	Local column	Foreign column
cr675_nbsstitching	cr675_stitching	cr675_nbsstitchingid
cr675_nbsmaterialstack	cr91b_materialstacks	cr675_nbsmaterialstackid

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS Operation	cr675_stitching	Lookup	True	100.00%
NBS Material stacks	cr91b_materialstacks	Lookup	True	99.85%
ConstructionName(View)	cr675_constructionidview	String	True	100.00%
MaterialStackName(View)	cr675_materialstacknameview	String	True	100.00%
OperationName(View)	cr675_operationnameview	String	True	100.00%
MaterialStackGuid(View)	cr91b_materialstackguidview	String	True	100.00%
Name	cr675_name	String	True	0.28%
OperationGroupPosition	cr675_operationgroupposition	String	True	0.28%
Position	cr675_position	Integer	True	100.00%
NBS Construction Material Stacks Stitchings	cr675_nbsconstructionmaterialstacksstitchingsid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.15%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS IFS MATERIALS

Logical name: cr675_nbsifsmaterials
Primary ID column: cr675_nbsifsmaterialsid
Primary name column: cr675_name_2
Column count: 29
Custom column count: 11
Row count: 12823

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
key	cr675_key	String	True	100.00%
NAME	cr675_name	String	True	100.00%
Name	cr675_name_2	String	True	100.00%
PART_NO	cr675_part_no	String	True	100.00%
PART_PRODUCT_FAMILY	cr675_part_product_family	String	True	100.00%
PART_PRODUCT_FAMILY_DESC	cr675_part_product_family_desc	String	True	100.00%
PART_STATUS	cr675_part_status	String	True	100.00%
PART_STATUS_DESCRIPTION	cr675_part_status_description	String	True	100.00%
VENDOR_NO	cr675_vendor_no	String	True	100.00%
DESCRIPTION	cr675_description	Memo	True	100.00%
UNIT_COST	cr675_unit_cost	Decimal	True	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS IFS MATERIALS	cr675_nbsifsmaterialsid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Material stack

Logical name: cr675_nbsmaterialstack
Primary ID column: cr675_nbsmaterialstackid
Primary name column: cr675_name
Column count: 62
Custom column count: 44
Row count: 12553

Relationships

Many to One

Related table	Local column	Foreign column
cr675_nbsmaterial	cr675_material	cr675_nbsmaterialid
cr675_nbsstitching	cr675_stitching	cr675_nbsstitchingid
cr675_nbsconstruction	cr91b_construction	cr675_nbsconstructionid

One to Many

Related table	Local column	Foreign column
cr675_nbsmaterialstackandconstraction	cr675_nbsmaterialstackid	cr675_materialstack
cr675_nbsconstructionmaterialstacksstitchings	cr675_nbsmaterialstackid	cr91b_materialstacks

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS Construction	cr91b_construction	Lookup	True	100.00%
NBS Material	cr675_material	Lookup	True	99.63%
NBS Operation	cr675_stitching	Lookup	True	10.57%
Material Stack Name	cr675_materialstackname	String	True	100.00%
Name	cr675_name	String	True	100.00%
ConstructionName(View)	cr91b_constructionnameview	String	True	100.00%
MaterialName(View)	cr91b_materialnameview	String	True	100.00%
OperationType(View)	cr91b_operationtypeview	String	True	100.00%
Orientation of layers	cr675_orientationoflayers	String	True	86.54%
Comments	cr91b_comments	String	True	2.59%

Display name	Logical name	Data type	Is custom?	Non-null percentage
HBBase Drawing	cr91b_hbbasedrawing	String	True	0.00%
Number of layer	cr675_numberoflayer	Integer	True	100.00%
Position	cr91b_position	Integer	True	100.00%
Size from edge	cr91b_sizefromedge	Integer	True	97.25%
MS nominal weight	cr675_msnominalweight	Decimal	True	94.66%
MS nominal thickness	cr675_msnominalthickness	Decimal	True	94.22%
HB Nominal Thickness	cr91b_hbnominalthickness	Decimal	True	92.46%
Material Stack Cost	cr675_value	Decimal	True	89.95%
MS maximum weight	cr675_msmaximumweight	Decimal	True	88.72%
MS minimum weight	cr675_msminimumweight	Decimal	True	88.72%
MS minimum thickness	cr675_msminimumthickness	Decimal	True	84.73%
MS maximum thickness	cr675_msmaximumthickness	Decimal	True	84.62%
Material price	cr91b_materialprice	Decimal	True	84.31%
Material Areal Weight	cr91b_materialarealweight	Decimal	True	77.02%
Material Thickness	cr91b_materialthickness	Decimal	True	76.82%
Material Override Price	cr91b_materialoverrideprice	Decimal	True	67.59%
HB Added Edge	cr91b_hbaddededge	Decimal	True	8.37%
HB Base Material Area	cr91b_hbbasematerialarea	Decimal	True	8.37%
HB Base Material Height	cr91b_hbbasematerialheight	Decimal	True	8.37%
HB Base Material Width	cr91b_hbbasematerialwidth	Decimal	True	8.37%
HB Nominal Density	cr91b_hbnominaldensity	Decimal	True	8.29%
HB Nominal Weight	cr91b_hbnominalweight	Decimal	True	8.29%
HB Base Drawing Areal Weight	cr91b_hbbasedrawingarealweight	Decimal	True	7.97%
HB Base Drawing Density	cr91b_hbbasedrawingdensity	Decimal	True	7.97%
HB Base Drawing Thickness	cr91b_hbbasedrawingthickness	Decimal	True	7.97%
HB Area Density	cr91b_hbareadensity	Decimal	True	0.02%
HB Plate Height	cr91b_hbplateheight	Decimal	True	0.02%
HB Plate Width	cr91b_hbplatewidth	Decimal	True	0.02%
HB Thickness	cr91b_hbthickness	Decimal	True	0.02%
HB Total Plate Area	cr91b_hbtotalplatearea	Decimal	True	0.02%
HB Weight	cr91b_hbweight	Decimal	True	0.02%
IsHardBallistics	cr91b_ishardballistics	Boolean	True	99.72%
IsMainPlate	cr91b_ismainplate	Boolean	True	99.39%
Notches	cr91b_notches	Boolean	True	84.65%
NBS Material stack	cr675_nbsmaterialstackid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.40%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Sample

Logical name: `cr675_testdashboardsample`
Primary ID column: `cr675_testdashboardsampleid`
Primary name column: `cr675_id`
Column count: 27
Custom column count: 9
Row count: 7134

Relationships

Many to One

Related table	Local column	Foreign column
`cr675_testcompounds`	`cr675_testcompounds`	`cr675_testcompoundsid`
`cr675_testdashboardproduct`	`cr675_product`	`cr675_testdashboardproductid`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Test Compounds	`cr675_testcompounds`	Lookup	True	98.98%
Product	`cr675_product`	Lookup	True	97.43%
id	`cr675_id`	String	True	100.00%
Serial number	`cr675_serialnumber`	String	True	83.38%
Operator Comment	`cr675_operatorcomment`	String	True	0.00%
Conditioning Temperature	`craab_conditioningtemperature`	String	True	0.00%
Conditioning Temperature	`cr91b_conditioningtemperature`	Decimal	True	94.06%
Weight	`cr675_weight`	Decimal	True	59.55%
Thickness	`cr675_thickness`	Decimal	True	15.87%
TestDashboard Sample	`cr675_testdashboardsampleid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	1.91%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%
Record Created On	`overriddencreatedon`	DateTime	False	0.00%
Owner	`ownerid`	Owner	False	100.00%

Table: NBS Test Compound

Logical name: `cr675_testcompounds`
Primary ID column: `cr675_testcompoundsid`
Primary name column: `cr675_id`
Column count: 36
Custom column count: 18
Row count: 6328

Relationships

Many to One

Related table	Local column	Foreign column
cr675_testorder	cr675_testorder	cr675_testorderid

One to Many

Related table	Local column	Foreign column
cr675_testdashboardsample	cr675_testcompoundsid	cr675_testcompounds
cr675_testdashboardtestprocedment	cr675_testcompoundsid	cr675_testcompounds
cr675_testdashboardphotos	cr675_testcompoundsid	cr675_testcompounds

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Test Order	cr675_testorder	Lookup	True	99.37%
Id	cr675_id	String	True	100.00%
Backing Type	cr675_backingtype	String	True	96.14%
Ballistic System Number in Sequence	cr675_ballisticsystemnumberinsequence	String	True	78.51%
Operator Comment	cr675_operatorcomment	String	True	0.40%
Drop Test Notes	cr675_droptestnotes	Memo	True	1.23%
Drop Test Result 1	cr675_droptestresult1	Integer	True	95.29%
Drop Test Result 2	cr675_droptestresult2	Integer	True	94.72%
Drop Test Result 3	cr675_droptestresult3	Integer	True	93.52%
Counter For Id	cr675_counterforid	Integer	True	78.51%
Clay Temperature	cr675_claytemperature	Integer	True	69.53%
Drop Test Result 4	cr675_droptestresult4	Integer	True	41.51%
Drop Test Result 5	cr675_droptestresult5	Integer	True	38.97%
Hit at angle	cr675_hitatangle	Integer	True	0.00%
Tested Product In Front of ICW	cr675_testedproductinfrontoficw	Integer	True	0.00%
V50 Assessment Value	cr675_v50assessmentvalue	Decimal	True	79.28%
Drop Height	cr91b_dropheight	Double	True	74.73%
Time of Occurrence	cr675_timeofoccurence	DateTime	True	0.00%
Test Compounds	cr675_testcompoundsid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	1.30%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS ICW Products

Logical name: `cr675_nbsicwproducts`
Primary ID column: `cr675_nbsicwproductsid`
Primary name column: `cr675_id`
Column count: 23
Custom column count: 5
Row count: 2257

Relationships

Many to One

Related table	Local column	Foreign column
cr675_testdashboardproduct	cr675_product	cr675_testdashboardproductid
cr675_testdashboardballisticsystem	cr675_ballisticsystem	cr675_testdashboardballisticsystemid

One to Many

Related table	Local column	Foreign column
cr675_testdashboardballisticsystem	cr675_nbsicwproductsid	cr91b_nbsicwproduct

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Product	cr675_product	Lookup	True	95.53%
BallisticSystem	cr675_ballisticsystem	Lookup	True	93.44%
ProductNameCalc	cr675_productnamecalc	String	True	100.00%
Id	cr675_id	String	True	0.00%
Position	cr675_position	Integer	True	72.35%
NBS ICW Products	cr675_nbsicwproductsid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	4.08%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS R Table

Logical name: `cr91b_nbsrtable`
Primary ID column: `cr91b_nbsrtableid`
Primary name column: `cr91b_name`
Column count: 48
Custom column count: 30
Row count: 2078

Relationships

One to Many

Related table	Local column	Foreign column
`cr675_testdashboardtestprocedment`	`cr91b_nbsrtableid`	`cr91b_nbsrtable`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	`cr91b_name`	String	True	100.00%
Test Compound ID	`cr91b_testcompoundid`	String	True	56.30%
Test Order ID	`cr91b_testorderid`	String	True	56.30%
Ballistic System	`cr91b_ballisticsystem`	String	True	55.58%
Projectile	`cr91b_projectile`	String	True	53.13%
Project Name	`cr91b_projectname`	String	True	46.78%
Cartridge Type	`cr91b_cartridgetype`	String	True	42.88%
Powder Type	`cr91b_powdertype`	String	True	34.46%
Notes	`cr91b_notes`	String	True	11.98%
Test standard name	`cr91b_teststandardname`	String	True	0.00%
Shot Number	`cr91b_shotnumber`	Integer	True	54.86%
Drop Test 1	`cr91b_droptest1`	Integer	True	51.97%
Drop Test 3	`cr91b_droptest3`	Integer	True	50.43%
Drop Test 4	`cr91b_droptest4`	Integer	True	50.43%
Drop Test 5	`cr91b_droptest5`	Integer	True	47.55%
Drop Test 2	`cr91b_droptest2`	Integer	True	45.72%
V50	`cr91b_v50`	Decimal	True	50.53%
Angle	`cr91b_angle`	Decimal	True	49.33%
Hit Angle	`cr91b_hitangle`	Decimal	True	49.33%
Measured Velocity	`cr91b_measuredvelocity`	Decimal	True	47.83%
Projectile Weight	`cr91b_projectileweight`	Decimal	True	47.31%
Muzzle Distance	`cr91b_muzzledistance`	Decimal	True	47.02%
Humidity	`cr91b_humidity`	Decimal	True	42.35%
Room Temp	`cr91b_roomtemp`	Decimal	True	42.35%
Powder Weight	`cr91b_powderweight`	Decimal	True	41.15%
Clay Temperature	`cr91b_claytemperature`	Decimal	True	20.79%
BFS Depth	`cr91b_bfsdepth`	Decimal	True	0.91%
Depth of Penetration	`cr91b_depthofpenetration`	Decimal	True	0.91%
BFS Diameter	`cr91b_bfsdiameter`	Decimal	True	0.67%
Valid	`cr91b_valid`	Boolean	True	100.00%
NBS R Table	`cr91b_nbsrtableid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.29%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%
Record Created On	`overriddencreatedon`	DateTime	False	0.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Owner	ownerid	Owner	False	100.00%

Table: NBS Ballistic System

Logical name: `cr675_testdashboardballisticsystem`
Primary ID column: `cr675_testdashboardballisticsystemid`
Primary name column: `cr675_ballisticsystemid`
Column count: 24
Custom column count: 6
Row count: 1918

Relationships

Many to One

Related table	Local column	Foreign column
`cr675_nbsicwproducts`	`cr91b_nbsicwproduct`	`cr675_nbsicwproductsid`

One to Many

Related table	Local column	Foreign column
`cr675_testorder`	`cr675_testdashboardballisticsystemid`	`cr675_ballisticsystem`
`cr675_nbsicwproducts`	`cr675_testdashboardballisticsystemid`	`cr675_ballisticsystem`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS ICW Product	cr91b_nbsicwproduct	Lookup	True	0.00%
Balistic system name(ICW)	cr675_ballisticsystemid	String	True	100.00%
Price	cr675_price	Decimal	True	82.85%
Is Draft	cr91b_isdraft	Boolean	True	100.00%
Is System shot	cr675_isshot	Boolean	True	94.73%
IsShot	cr91b_isshot	Boolean	True	78.26%
TestDashboardBallisticSystem	cr675_testdashboardballisticsystemid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.73%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Construction

Logical name: `cr675_nbsconstruction`
Primary ID column: `cr675_nbsconstructionid`
Primary name column: `cr675_constractionname`

Column count: 54
Custom column count: 36
Row count: 1808

Relationships

One to Many

Related table	Local column	Foreign column
cr675_testdashboardproduct	cr675_nbsconstructionid	cr675_constraction
cr675_nbsmaterialstackandconstraction	cr675_nbsconstructionid	cr675_construction
cr675_nbsmaterialstack	cr675_nbsconstructionid	cr91b_construction
cr675_nbsmaterial	cr675_nbsconstructionid	cr91b_cr675_nbsconstruction

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Construction name	cr675_constractionname	String	True	100.00%
EmptyRows	cr91b_emptyrows	String	True	46.90%
Notes	cr675_notes	String	True	0.00%
TextFieldToEmbedAppIn	cr91b_textfieldtoembedappin	String	True	0.00%
Migration logs	cr675_migrationlogs	Memo	True	18.14%
AltKeyColumn	cr91b_altkeycolumn	Integer	True	76.83%
PriceMod	cr91b_pricemode	Integer	True	1.00%
ThicknessMod	cr91b_thicknessmod	Integer	True	1.00%
WeightMod	cr91b_weightmod	Integer	True	1.00%
Construction Costs	cr675_constractionvalue	Decimal	True	98.34%
Thickness	cr91b_hbthickness	Decimal	True	94.63%
Weight	cr91b_hbweight	Decimal	True	94.63%
Constraction nominal weight	cr675_constractionnominalweight	Decimal	True	87.06%
Construction nominal thickness	cr675_constructionnominalthickness	Decimal	True	87.06%
PriceMod	cr675_pricemod	Decimal	True	81.14%
ThicknessMod	cr675_thicknessmod	Decimal	True	81.14%
WeightMod	cr675_weightmod	Decimal	True	81.14%
Construction maximum thickness	cr675_constructionmaximumthickness	Decimal	True	17.31%
Construction maximum weight	cr675_constructionmaximumweight	Decimal	True	17.31%
Construction minimum thickness	cr675_constructionminimumthickness	Decimal	True	17.31%
Construction minimum weight	cr675_constructionminimumweight	Decimal	True	17.31%
HB Area Density	cr91b_hbareadensity	Decimal	True	12.61%
HB Plate Height	cr91b_hbplateheight	Decimal	True	12.61%
HB Total Plate Area	cr91b_hbtotalplatearea	Decimal	True	12.61%
HB Added Edge	cr91b_hbaddededge	Decimal	True	12.22%
HB Plate Width	cr91b_hbplatewidth	Decimal	True	12.22%
HB Area Density Modifier	cr91b_hbareadensitymodifier	Decimal	True	10.18%
HB Height Modifier	cr91b_hbheightmodifier	Decimal	True	10.18%
HB Thickness Modifier	cr91b_hbthicknessmodifier	Decimal	True	10.18%
HB Weight Modifier	cr91b_hbweightmodifier	Decimal	True	10.18%
HB Width Modifier	cr91b_hbwidthmodifier	Decimal	True	10.18%
HB Area Modifier	cr91b_hbareamodifier	Decimal	True	0.00%
Is Draft	cr91b_isdraft	Boolean	True	100.00%
IsFRECII	cr91b_isfrecii	Boolean	True	100.00%
Is Construction tested	cr91b_isshot	Boolean	True	99.83%
IsHardBallistics	cr91b_ishardballistics	Boolean	True	99.34%
NBS Construction	cr675_nbsconstructionid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Product

Logical name: `cr675_testdashboardproduct`
Primary ID column: `cr675_testdashboardproductid`
Primary name column: `cr675_productid`
Column count: 49
Custom column count: 31
Row count: 1682

Relationships

Many to One

Related table	Local column	Foreign column
cr675_testdashboardgeometries	cr675_testdashboardgeometries	cr675_testdashboardgeometriesid
cr675_nbsconstruction	cr675_constraction	cr675_nbsconstructionid
cr91b_nbsprecutpatterns	cr91b_nbsprecutpatterns	cr91b_nbsprecutpatternsid

One to Many

Related table	Local column	Foreign column
cr675_nbsicwproducts	cr675_testdashboardproductid	cr675_product
cr675_testdashboardsample	cr675_testdashboardproductid	cr675_product
cr675_nbsfrec2rndorders	cr675_testdashboardproductid	cr675_testdashboardproduct
cr675_testorder	cr675_testdashboardproductid	cr675_testdashboardproduct

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Construction	cr675_constraction	Lookup	True	98.45%
NBS Geometries	cr675_testdashboardgeometries	Lookup	True	90.19%
NBS Pre-Cut Patterns	cr91b_nbsprecutpatterns	Lookup	True	0.00%
Geometry(view)	cr675_geometryview	String	True	100.00%
Product name	cr675_productid	String	True	99.88%
Product Code	cr675_productcode	String	True	36.62%
ZK Number	cr675_zknumber	String	True	0.00%
FieldToEmbedAppIn	cr91b_fieldtoembedappin	String	True	0.00%
GemetryAltKey	dvlp_gemetryaltkey	Integer	True	72.12%
Position	cr675_position	Integer	True	0.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
ConstructionAltKey	dvlp_constructionaltkey	Integer	True	0.00%
HB Max Area Density	cr91b_hbmaxareadensity	Decimal	True	67.24%
HB Max Weight	cr91b_hbmaxweight	Decimal	True	67.24%
HB Min Area Density	cr91b_hbminareadensity	Decimal	True	67.24%
HB Min Weight	cr91b_hbminweight	Decimal	True	67.24%
Price	cr675_price	Decimal	True	63.20%
HB Total Plate Area	cr91b_hbtotalplatearea	Decimal	True	57.19%
HB Weight	cr91b_hbweight	Decimal	True	48.63%
HB Thickness Modifier	cr91b_hbthicknessmodifier	Decimal	True	17.42%
HB Weight Modifier	cr91b_hbweightmodifier	Decimal	True	17.30%
HB Height Modifier	cr91b_hbheightmodifier	Decimal	True	17.24%
HB Area Density Modifier	cr91b_hbareadensitymodifier	Decimal	True	17.18%
HB Width Modifier	cr91b_hbwidthmodifier	Decimal	True	17.18%
HB Area Density	cr91b_hbareadensity	Decimal	True	16.71%
HB Height	cr91b_hbheight	Decimal	True	16.71%
HB Width	cr91b_hbwidth	Decimal	True	16.71%
HB Thickness	cr91b_hbthickness	Decimal	True	16.59%
HB Added Edge	cr91b_hbaddededge	Decimal	True	1.66%
Is Draft	cr91b_isdraft	Boolean	True	100.00%
Is Product tested	cr675_isshot	Boolean	True	95.30%
IsShot	cr91b_isshot	Boolean	True	77.94%
TestDashboardProduct	cr675_testdashboardproductid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS FREC2 RND Orders

Logical name: `cr675_nbsfrec2rndorders`
Primary ID column: `cr675_nbsfrec2rndordersid`
Primary name column: `cr675_id`
Column count: 37
Custom column count: 19
Row count: 1115

Relationships

Many to One

Related table	Local column	Foreign column
`cr675_project`	`cr675_project`	`cr675_projectid`
`cr675_testdashboardproduct`	`cr675_testdashboardproduct`	`cr675_testdashboardproductid`
`cr675_nbsstitching`	`cr675_nbsstitching`	`cr675_nbsstitchingid`
`account`	`cr675_institute`	`accountid`
`cr91b_nbsprogram`	`cr675_cr91b_nbsprogram`	`cr91b_nbsprogramid`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Receiver	`cr675_institute`	Lookup	True	99.73%
NBS Project	`cr675_project`	Lookup	True	99.73%
NBS Product	`cr675_testdashboardproduct`	Lookup	True	99.73%
NBS Program	`cr675_cr91b_nbsprogram`	Lookup	True	93.72%
NBS Operation	`cr675_nbsstitching`	Lookup	True	93.54%
Order Status	`cr675_orderstatus`	Picklist	True	99.82%
Raw mat preparation	`cr675_rawmatpreparation`	Picklist	True	99.73%
Priority	`cr675_priority`	Picklist	True	1.88%
ID	`cr675_id`	String	True	100.00%
Notes	`cr675_notes`	String	True	100.00%
Flow	`cr675_flow`	String	True	92.74%
ApprovalInfo	`cr675_approvalinfo`	String	True	91.75%
IFS ShopOrder ID	`cr675_ifsshoporderid`	String	True	1.26%
Number of Samples	`cr675_numberofsamples`	Integer	True	99.55%
Invoiced	`craab_invoiced`	Boolean	True	22.60%
DeadLine	`cr675_deadline`	DateTime	True	73.72%
Ready for pressing	`cr675_confirmedstartdate`	DateTime	True	64.39%
Delivered Timestamp	`craab_timestamp`	DateTime	True	17.85%
Planned Pressed	`cr675_confirmedfinishdate`	DateTime	True	11.57%
NBS FREC2 RND Orders	`cr675_nbsfrec2rndordersid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	85.74%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%
Record Created On	`overriddencreatedon`	DateTime	False	0.00%
Owner	`ownerid`	Owner	False	100.00%

Table: NBS Operation

Logical name: `cr675_nbsstitching`
Primary ID column: `cr675_nbsstitchingid`
Primary name column: `cr675_type`
Column count: 38

Custom column count: 20
Row count: 640

Relationships

Many to One

Related table	Local column	Foreign column
`cr91b_nbsprogram`	`cr91b_nbsprogram`	`cr91b_nbsprogramid`
`craab_nbstooltype`	`craab_nbstooltype`	`craab_nbstooltypeid`

One to Many

Related table	Local column	Foreign column
`cr675_nbsmaterialstack`	`cr675_nbsstitchingid`	`cr675_stitching`
`cr675_nbsconstructionmaterialstacksstitchings`	`cr675_nbsstitchingid`	`cr675_stitching`
`cr675_nbsfrec2rndorders`	`cr675_nbsstitchingid`	`cr675_nbsstitching`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS Program	`cr91b_nbsprogram`	Lookup	True	86.56%
NBS Tool Type	`craab_nbstooltype`	Lookup	True	84.06%
Operation Type	`cr91b_operationtype`	Picklist	True	99.06%
Tool type	`cr675_tooling`	Picklist	True	20.62%
Name	`cr675_type`	String	True	100.00%
Description	`cr675_description`	String	True	9.84%
Cycle Type	`cr91b_cycletype`	String	True	5.62%
FRECII Tooling	`cr91b_freciitooling`	String	True	4.06%
FRECII Version	`cr91b_freciiversion`	String	True	4.06%
Carousel Oven Temp	`cr91b_carouseloventemp`	String	True	2.34%
Carousel Oven Cycle Time	`cr91b_carouselovencycletime`	String	True	2.19%
FREC Process Info	`cr91b_frecprocessinfo`	String	True	2.03%
Small Oven Cycle Time	`cr91b_smallovencycletime`	String	True	0.62%
No/Frame	`cr91b_noframe`	Integer	True	1.72%
Small Oven Temp	`cr91b_smalloventemp`	Integer	True	0.31%
Carousel Oven Vacuum	`cr91b_carouselovenvacuum`	Decimal	True	2.66%
Carousel Oven Max Temp After Cooling	`cr91b_carouselovenmaxtempaftercooling`	Decimal	True	1.41%
Small Oven Max Temp After Cooling	`cr91b_smallovenmaxtempaftercooling`	Decimal	True	0.78%
Small Oven Vacuum	`cr91b_smallovenvacuum`	Decimal	True	0.62%
Is Operation tested	`cr91b_isshot`	Boolean	True	94.53%
NBS Operation	`cr675_nbsstitchingid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Record Created On	`overriddencreatedon`	DateTime	False	0.00%
Owner	`ownerid`	Owner	False	100.00%

Table: NBS Material

Logical name: `cr675_nbsmaterial`
Primary ID column: `cr675_nbsmaterialid`
Primary name column: `cr675_materialname`
Column count: 50
Custom column count: 30
Row count: 522

Relationships

Many to One

Related table	Local column	Foreign column
`account`	`cr675_producer`	`accountid`
`cr675_testdashboardgeometries`	`cr91b_cr675_testdashboardgeometries`	`cr675_testdashboardgeometriesid`
`cr675_nbsconstruction`	`cr91b_cr675_nbsconstruction`	`cr675_nbsconstructionid`
`cr91b_supplier`	`cr91b_supplier`	`cr91b_supplierid`
`cr675_ifsmaterialsv3`	`cr675_ifsmaterialsv3`	`cr675_ifsmaterialsv3id`

One to Many

Related table	Local column	Foreign column
`cr675_nbsmaterialstack`	`cr675_nbsmaterialid`	`cr675_material`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Producer	`cr675_producer`	Lookup	True	95.40%
IFS MATERIALS V3	`cr675_ifsmaterialsv3`	Lookup	True	59.20%
NBS Geometry	`cr91b_cr675_testdashboardgeometries`	Lookup	True	1.92%
NBS Construction	`cr91b_cr675_nbsconstruction`	Lookup	True	0.96%
Supplier	`cr91b_supplier`	Lookup	True	0.00%
Material Type	`cr675_materialtype`	Picklist	True	98.85%
Validation	`cr675_validation`	Picklist	True	0.38%
Material name	`cr675_materialname`	String	True	100.00%
Material code	`cr675_materialcode`	String	True	66.67%
Internal name	`cr91b_internalname`	String	True	20.50%
Note	`cr91b_note`	String	True	10.15%
HB Added Edge	`cr91b_hbaddededge`	String	True	0.00%
Nominal weight	`cr675_nominalweight`	Decimal	True	77.01%
Nominal thickness	`cr675_nominalthickness`	Decimal	True	73.75%
Price/m2	`cr675_price`	Decimal	True	64.37%
Maximum weight	`cr675_maximumweight`	Decimal	True	63.22%
Minimum weight	`cr675_minimumweight`	Decimal	True	63.22%
Minimum thickness	`cr675_minimumthickness`	Decimal	True	61.11%
Maximum thickness	`cr675_maximumthickness`	Decimal	True	60.34%
HB Base Drawing Thickness	`cr91b_hbbasedrawingthickness`	Decimal	True	42.34%
HB Base Drawing Areal Weight	`cr91b_hbbasedrawingarealweight`	Decimal	True	41.76%
HB Base Drawing Density	`cr91b_hbbasedrawingdensity`	Decimal	True	39.85%
Price/piece	`cr91b_pricepiece`	Decimal	True	28.54%
HB Base Material Area	`cr91b_hbbasematerialarea`	Decimal	True	19.54%
HB Base Material Height	`cr91b_hbbasematerialheight`	Decimal	True	19.54%

Display name	Logical name	Data type	Is custom?	Non-null percentage
HB Base Material Width	cr91b_hbmaterialwidth	Decimal	True	19.54%
Price/m	cr91b_pricem	Decimal	True	15.13%
Is Material tested	cr91b_isshot	Boolean	True	79.50%
Curve	cr91b_curve	Boolean	True	69.54%
IsMainPlate	cr91b_ismainplate	Boolean	True	69.54%
NBS Material	cr675_nbsmaterialid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Currency	transactioncurrencyid	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Exchange Rate	exchangerate	Decimal	False	0.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Test Protocol Template

Logical name: `cr675_testdashboardstandarddetails`
Primary ID column: `cr675_testdashboardstandarddetailsid`
Primary name column: `cr675_id`
Column count: 33
Custom column count: 15
Row count: 244

Relationships

Many to One

Related table	Local column	Foreign column
cr675_testdashboardstandard	cr675_standard	cr675_testdashboardstandardid
cr675_testdashboardammotypedictionary	cr675_ammotypedictionary	cr675_testdashboardammotypedictionaryid

One to Many

Related table	Local column	Foreign column
cr675_testdashboardtestedstandarddetail	cr675_testdashboardstandarddetailsid	cr675_testedstandarddetail
cr675_testorder	cr675_testdashboardstandarddetailsid	cr675_standarddetail

Many to Many

Related table	Local column	Foreign column
cr675_testorder	cr675_testdashboardstandarddetailsid	cr675_testorderid

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Standard	cr675_standard	Lookup	True	99.59%

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS Bullet Type Dictionary	cr675_ammotypedictionary	Lookup	True	88.93%
Bullet type(view)	cr675_bullettypeview	String	True	100.00%
Standard Detail name	cr675_id	String	True	100.00%
Level of Protection	cr675_armortype	String	True	88.11%
Condition requirement	cr675_panelcondition	String	True	88.11%
Panel size	cr675_panelsize	String	True	87.30%
Additional Notes	cr675_additionalnotes	String	True	86.48%
BFS Requirement	cr675_bfsrequi	String	True	82.38%
Shots per panel	cr675_shotsperpanel	Integer	True	87.70%
Bullet mass	cr675_bulletmass	Decimal	True	89.34%
Nom Velocity	cr675_nomvelocity	Decimal	True	69.67%
Max Velocity	cr675_maxvelocity	Decimal	True	69.26%
Min Velocity	cr675_minvelocity	Decimal	True	69.26%
Test Action Type	cr675_testactiontype	Boolean	True	100.00%
TestDashboard Standard Details	cr675_testdashboardstandarddetailsid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.82%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Bullet Type Dictionary

Logical name: `cr675_testdashboardammotypedictionary`
Primary ID column: `cr675_testdashboardammotypedictionaryid`
Primary name column: `cr675_name`
Column count: 23
Custom column count: 5
Row count: 182

Relationships

Many to One

Related table	Local column	Foreign column
account	cr675_produceraccount	accountid

One to Many

Related table	Local column	Foreign column
cr675_testdashboardstandarddetails	cr675_testdashboardammotypedictionaryid	cr675_ammotypedictionary
cr675_testorder	cr675_testdashboardammotypedictionaryid	cr675_nbsbullettypedict

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Producer Account	cr675_produceraccount	Lookup	True	26.92%
Bullet Name With Producer Name	cr675_bulletnamewithproducername	String	True	100.00%
Name	cr675_name	String	True	100.00%
Bullet Calliber	cr675_bulletcalliber	String	True	69.78%
Bullet Weight [g]	cr675_bulletweight	Decimal	True	63.74%
Test Dashboard Ammo Type Dictionary	cr675_testdashboardammotypedictionaryid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Project

Logical name: `cr675_project`
Primary ID column: `cr675_projectid`
Primary name column: `cr675_testdashboardprojectid`
Column count: 21
Custom column count: 3
Row count: 174

Relationships

One to Many

Related table	Local column	Foreign column
cr675_testorder	cr675_projectid	cr675_project_testorder
cr675_nbsfrec2rndorders	cr675_projectid	cr675_project
cr675_nbspreliminarytesting	cr675_projectid	cr675_projectid

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Project name	cr675_testdashboardprojectid	String	True	100.00%
Country	cr675_country	String	True	68.39%
Additional Info	cr675_additionalinfo	String	True	14.37%
Project	cr675_projectid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%
Record Created On	`overriddencreatedon`	DateTime	False	0.00%
Owner	`ownerid`	Owner	False	100.00%

Table: NBS Geometry

Logical name: `cr675_testdashboardgeometries`
Primary ID column: `cr675_testdashboardgeometriesid`
Primary name column: `cr675_name`
Column count: 28
Custom column count: 10
Row count: 154

Relationships

One to Many

Related table	Local column	Foreign column
`cr675_testdashboardproduct`	`cr675_testdashboardgeometriesid`	`cr675_testdashboardgeometries`
`cr675_nbsmaterial`	`cr675_testdashboardgeometriesid`	`cr91b_cr675_testdashboardgeometries`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Tooling size	`cr91b_toolingsize`	Picklist	True	0.00%
Name	`cr675_name`	String	True	100.00%
Description	`cr675_description`	Memo	True	62.34%
AltKeyColumn	`dvlp_altkeycolumn`	Integer	True	87.66%
Base Material Width	`cr91b_hbbasematerialwidth`	Decimal	True	79.87%
Base Material Height	`cr91b_hbbasematerialheight`	Decimal	True	79.22%
Base Material Area	`cr91b_hbbasematerialarea`	Decimal	True	78.57%
IsDrawing	`cr91b_isdrawing`	Boolean	True	94.81%
Is Geometry tested	`cr91b_isshot`	Boolean	True	87.66%
Curve	`cr91b_hbcurve`	Boolean	True	86.36%
Test Dashboard Geometries	`cr675_testdashboardgeometriesid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Group Order

Logical name: `craab_nbsgrouporder`
Primary ID column: `craab_nbsgrouporderid`
Primary name column: `craab_name`
Column count: 19
Custom column count: 1
Row count: 149

Relationships

One to Many

Related table	Local column	Foreign column
cr675_testorder	craab_nbsgrouporderid	craab_nbsgrouporder

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	craab_name	String	True	100.00%
NBS Group Order	craab_nbsgrouporderid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS MaterialStackAndConstraction

Logical name: `cr675_nbsmaterialstackandconstraction`
Primary ID column: `cr675_nbsmaterialstackandconstractionid`
Primary name column: `cr675_name`
Column count: 25
Custom column count: 7
Row count: 130

Relationships

Many to One

Related table	Local column	Foreign column
cr675_nbsmaterialstack	cr675_materialstack	cr675_nbsmaterialstackid
cr675_nbsconstruction	cr675_construction	cr675_nbsconstructionid

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
NBS Construction	cr675_construction	Lookup	True	0.00%
NBS Material Stack	cr675_materialstack	Lookup	True	0.00%
ConstructionNmae(View)	cr675_constructionnmaeview	String	True	100.00%
Material Stack Name(View)	cr675_materialstacknameview	String	True	100.00%
Name	cr675_name	String	True	100.00%
Position	cr675_position	Integer	True	100.00%
MaterialStackCosts	cr675_materialstackvalue	Decimal	True	0.00%
NBS MaterialStackAndConstraction	cr675_nbsmaterialstackandconstractionid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Program

Logical name: `cr91b_nbsprogram`
Primary ID column: `cr91b_nbsprogramid`
Primary name column: `cr91b_name`
Column count: 27
Custom column count: 9
Row count: 97

Relationships

One to Many

Related table	Local column	Foreign column
cr675_nbsstitching	cr91b_nbsprogramid	cr91b_nbsprogram
cr675_nbsfrec2rndorders	cr91b_nbsprogramid	cr675_cr91b_nbsprogram

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Program type	cr91b_programtype	Picklist	True	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	cr91b_name	String	True	100.00%
Cooling setpoint [C]	cr91b_coolingsetpoint	Decimal	True	100.00%
Pressure setpoint [bar]	cr91b_pressuresetpoint	Decimal	True	100.00%
Temperature setpoint [C]	cr91b_temperaturesetpoint	Decimal	True	100.00%
Dwell time [min]	cr91b_dwelltime	Decimal	True	95.88%
Decompression rate [bar]	cr91b_decompressionrate	Decimal	True	91.75%
Temperature setpoint pressurize [C]	cr91b_temperaturesetpointpressurize	Decimal	True	4.12%
Is Program tested	cr91b_isshot	Boolean	True	89.69%
NBS Program	cr91b_nbsprogramid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Standard Names Dictionary

Logical name: `cr675_testdashboardstandard`
Primary ID column: `cr675_testdashboardstandardid`
Primary name column: `cr675_standardid`
Column count: 19
Custom column count: 1
Row count: 36

Relationships

One to Many

Related table	Local column	Foreign column
cr675_testdashboardstandarddetails	cr675_testdashboardstandardid	cr675_standard

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Standard name	cr675_standardid	String	True	100.00%
TestDashboardStandard	cr675_testdashboardstandardid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Preliminary Testing

Logical name: cr675_nbspreliminarytesting
Primary ID column: cr675_nbspreliminarytestingid
Primary name column: cr675_ballisticsystem
Column count: 25
Custom column count: 7
Row count: 21

Relationships

Many to One

Related table	Local column	Foreign column
cr675_project	cr675_projectid	cr675_projectid
account	cr675_client	accountid
contact	cr675_client	contactid

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
ProjectID	cr675_projectid	Lookup	True	100.00%
Is invoiced	cr675_isinvoiced	Picklist	True	100.00%
Visma article	cr675_vismaarticle	Picklist	True	90.48%
Ballistic System	cr675_ballisticsystem	String	True	76.19%
Sample Count	cr675_samplecount	Integer	True	100.00%
Date	cr675_date	DateTime	True	28.57%
Client	cr675_client	Customer	True	100.00%
NBS Preliminary Testing	cr675_nbspreliminarytestingid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	28.57%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Backing Type Dictionary

Logical name: `cr675_nbstestdashboardbackingtypedictionary`
Primary ID column: `cr675_nbstestdashboardbackingtypedictionaryid`
Primary name column: `cr675_name`
Column count: 19
Custom column count: 1
Row count: 16

Relationships

One to Many

Related table	Local column	Foreign column
`cr675_testorder`	`cr675_nbstestdashboardbackingtypedictionaryid`	`cr675_backingtypedictionary`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	`cr675_name`	String	True	100.00%
NBS Testdashboard Backing Type Dictionary	`cr675_nbstestdashboardbackingtypedictionaryid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%
Record Created On	`overriddencreatedon`	DateTime	False	0.00%
Owner	`ownerid`	Owner	False	100.00%

Table: NBS Cartridge Type Dictionary

Logical name: `cr675_nbstestdashboardcartridgetypedictionary`
Primary ID column: `cr675_nbstestdashboardcartridgetypedictionaryid`
Primary name column: `cr675_name`
Column count: 19
Custom column count: 1
Row count: 15

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	cr675_name	String	True	100.00%
NBS Test Dashboard Cartridge Type Dictionary	cr675_nbstestdashboardcartridgetypedictionaryid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	26.67%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Institute

Logical name: cr675_testdashboardinstitute
Primary ID column: cr675_testdashboardinstituteid
Primary name column: cr675_instituteid
Column count: 20
Custom column count: 2
Row count: 13

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
InstituteID	cr675_instituteid	String	True	100.00%
Institute Name	cr675_institutename	String	True	100.00%
TestDashboardInstitute	cr675_testdashboardinstituteid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: R&DOrderView

Logical name: `cr675_orderviewrd`
Primary ID column: `cr675_orderviewrdid`
Primary name column: `cr675_splistid`
Column count: 51
Custom column count: 33
Row count: 9

Relationships

One to Many

Related table	Local column	Foreign column
`cr675_testorder`	`cr675_orderviewrdid`	`cr675_orderviewrd`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Backing type	`cr675_backingtype`	String	True	100.00%
Bullet/Missile	`cr675_bulletmissile`	String	True	100.00%
Client	`cr675_client`	String	True	100.00%
Conditioning	`cr675_conditioning`	String	True	100.00%
Constraction	`cr675_constraction`	String	True	100.00%
ContactPerson	`cr675_contactperson`	String	True	100.00%
Create by person	`cr675_createbyperson`	String	True	100.00%
ICW	`cr675_icw`	String	True	100.00%
No of shoots	`cr675_noofshoots`	String	True	100.00%
Notes	`cr675_notes`	String	True	100.00%
Produced	`cr675_produced`	String	True	100.00%
Project/Issue	`cr675_projectissue`	String	True	100.00%
Quantity	`cr675_quantity`	String	True	100.00%
RM/Product	`cr675_rmproduct`	String	True	100.00%
SPListID	`cr675_splistid`	String	True	100.00%
Standard	`cr675_standard`	String	True	100.00%
Test type	`cr675_testtype`	String	True	100.00%
Velocity	`cr675_velocity`	String	True	100.00%
Verified by QA	`cr675_verifiedbyqa`	String	True	100.00%
ZK number	`cr675_zknumber`	String	True	100.00%
Additional test info	`cr675_additionaltestinfo`	String	True	88.89%
Operator Email	`cr675_operatoremail`	String	True	77.78%
Planned shipping	`cr675_plannedshipping`	String	True	77.78%
Priority	`cr675_priority`	String	True	77.78%
Queue No	`cr675_queueno`	String	True	77.78%
Reason for priority	`cr675_reasonforpriority`	String	True	77.78%
Serial number	`cr675_serialnumber`	String	True	77.78%
OrderStatus	`cr675_orderstatus`	String	True	66.67%
Pattern	`cr675_pattern`	String	True	44.44%
Deadline	`cr675_deadline`	String	True	22.22%
Received	`cr675_received`	String	True	22.22%
Shipped	`cr675_shipped`	String	True	22.22%
Shipped Yes/No	`cr675_shippedyesno`	String	True	11.11%
OrderViewRD	`cr675_orderviewrdid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS FRECII Tool Type

Logical name: `craab_nbstooltype`
Primary ID column: `craab_nbstooltypeid`
Primary name column: `craab_name`
Column count: 19
Custom column count: 1
Row count: 6

Relationships

One to Many

Related table	Local column	Foreign column
`cr675_nbsstitching`	`craab_nbstooltypeid`	`craab_nbstooltype`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	craab_name	String	True	100.00%
NBS Tool Type	craab_nbstooltypeid	Uniqueidentifier	False	100.00%
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

Table: NBS Powder Type Dictionary

Logical name: `cr675_nbstestdashboardpowdertypedictionary`
Primary ID column: `cr675_nbstestdashboardpowdertypedictionaryid`
Primary name column: `cr675_name`
Column count: 19
Custom column count: 1
Row count: 4

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
Name	`cr675_name`	String	True	100.00%
NBS Test Dashboard Powder Type Dictionary	`cr675_nbstestdashboardpowdertypedictionaryid`	Uniqueidentifier	False	100.00%
Created By	`createdby`	Lookup	False	100.00%
Modified By	`modifiedby`	Lookup	False	100.00%
Owning Business Unit	`owningbusinessunit`	Lookup	False	100.00%
Owning User	`owninguser`	Lookup	False	100.00%
Created By (Delegate)	`createdonbehalfby`	Lookup	False	0.00%
Modified By (Delegate)	`modifiedonbehalfby`	Lookup	False	0.00%
Owning Team	`owningteam`	Lookup	False	0.00%
Status	`statecode`	State	False	100.00%
Status Reason	`statuscode`	Status	False	100.00%
Import Sequence Number	`importsequencenumber`	Integer	False	0.00%
Time Zone Rule Version Number	`timezoneruleversionnumber`	Integer	False	0.00%
UTC Conversion Time Zone Code	`utcconversiontimezonecode`	Integer	False	0.00%
Version Number	`versionnumber`	BigInt	False	100.00%
Created On	`createdon`	DateTime	False	100.00%
Modified On	`modifiedon`	DateTime	False	100.00%
Record Created On	`overriddencreatedon`	DateTime	False	0.00%
Owner	`ownerid`	Owner	False	100.00%

Table: NBS Photo

Logical name: `cr675_testdashboardphotos`
Primary ID column: `cr675_testdashboardphotosid`
Primary name column: `cr675_name`
Column count: 22
Custom column count: 4
Row count: 3

Relationships

Many to One

Related table	Local column	Foreign column
`cr675_testcompounds`	`cr675_testcompounds`	`cr675_testcompoundsid`

Columns

Display name	Logical name	Data type	Is custom?	Non-null percentage
None	`entityimageid`	Uniqueidentifier	True	100.00%
Test Dashboard Test Compounds	`cr675_testcompounds`	Lookup	True	0.00%
Id	`cr675_name`	String	True	100.00%
Notes	`cr675_notes`	String	True	0.00%
Test Dashboard Photos	`cr675_testdashboardphotosid`	Uniqueidentifier	False	100.00%

Display name	Logical name	Data type	Is custom?	Non-null percentage
Created By	createdby	Lookup	False	100.00%
Modified By	modifiedby	Lookup	False	100.00%
Owning Business Unit	owningbusinessunit	Lookup	False	100.00%
Owning User	owninguser	Lookup	False	100.00%
Modified By (Delegate)	modifiedonbehalfby	Lookup	False	66.67%
Created By (Delegate)	createdonbehalfby	Lookup	False	0.00%
Owning Team	owningteam	Lookup	False	0.00%
Status	statecode	State	False	100.00%
Status Reason	statuscode	Status	False	100.00%
Import Sequence Number	importsequencenumber	Integer	False	0.00%
Time Zone Rule Version Number	timezoneruleversionnumber	Integer	False	0.00%
UTC Conversion Time Zone Code	utcconversiontimezonecode	Integer	False	0.00%
Version Number	versionnumber	BigInt	False	100.00%
Created On	createdon	DateTime	False	100.00%
Modified On	modifiedon	DateTime	False	100.00%
Record Created On	overriddencreatedon	DateTime	False	0.00%
Owner	ownerid	Owner	False	100.00%

2.3   Solutions

A **solution** is a logical container for components such as tables, apps, dashboards, and other resources that are related to a specific process or system. Solutions play a key role in organizing and managing system components, particularly when moving them between environments.

As described by Microsoft:

> Solutions are used to transport apps and components from one environment to another or to apply a set of customizations to existing apps. A solution can contain one or more apps as well as other components such as site maps, tables, processes, web resources, choices, flows, and more.
> Source

In the context of the NBS system, it was critical to identify which solutions were associated with the system. This information will be essential for migrating the NBS system from the current `NFM Group Def` environment to the `NFM Group NBS DEV` environment. Properly identifying and organizing these solutions ensures that all related components—tables, apps, and workflows—are migrated seamlessly.

Each solution has a **display name** (used for easy identification) and a **unique name**, which serves as an identifier for system-level operations. This distinction helps ensure that the correct solutions are managed during customization or migration efforts.

2.3.1 List of Solutions Related to NBS

Display name	Unique name
Ribbon_1	Ribbon_1
Ribbon_2	Ribbon_2
Ribbon_3	Ribbon_3
Ribbon_4	Ribbon_4
Ribbon_5	Ribbon_5
NBS Product	NBSProduct
NBS Construction	NBSConstruction
Balistic System	BalisticSystem
NBS Geometry	NBSGeometry
NBSTestOrder	NBSTestOrder
NBS Project	NBSProject
NBS PreliminaryTest	PreliminaryTest
Backing Type	BackingType
NBS Model-Driven	NBSModelDriven
NBS Apps	NBSApps
remove dependencies	removedependencies
NBS Migration	NBSMigration
NBS Tester	NBSTester
Construction Creator Model Driven	ConstructionCreatorModelDriven
NBS Database	NBSDatabase
NBS Data Base for migration	NBSDataBaseformigration
NFM BallisticDB	NFMBallisticDB
Account	Account
Common Data Services Default Solution	Crb118a

2.3.2 Inventory of Solutions Related to NBS

Below is a comprehensive inventarization of solutions along with their components such as tables and apps.

Solution: Ribbon_1

Unique name: `Ribbon_1`

Solution components

- **Tables**
  - IFS MATERIALS V3
  - NBS FRECII Tool Type
  - NBS Tested Standard Detail
  - Account
  - NBS Project

Solution: Ribbon_2

Unique name: `Ribbon_2`

Solution components

- **Tables**
  - NBS Material
  - NBS Geometry
  - NBS Operation
  - NBS Product
  - NBS Program

Solution: Ribbon_3

Unique name: `Ribbon_3`

Solution components

- **Tables**
  - NBS Ballistic System
  - NBS FREC2 RND Orders
  - NBS Test Order
  - NBS Product
  - NBS Construction

Solution: Ribbon_4

Unique name: `Ribbon_4`

Solution components

- **Tables**
  - NBS Test Protocol Template
  - NBS Project
  - NBS Backing Type Dictionary
  - NBS Bullet Type Dictionary
  - NBS Cartridge Type Dictionary

Solution: Ribbon_5

Unique name: `Ribbon_5`

Solution components

- **Tables**
  - NBS Powder Type Dictionary

Solution: NBS Product

Unique name: `NBSProduct`

Solution components

- **Tables**
  - NBS Product

Solution: NBS Construction

Unique name: `NBSConstruction`

Solution components

- **Tables**
  - NBS Construction

Solution: Balistic System

Unique name: `BalisticSystem`

Solution components

- **Tables**
  - NBS Ballistic System

Solution: NBS Geometry

Unique name: `NBSGeometry`

Solution components

- **Tables**
  - NBS Geometry

Solution: NBSTestOrder

Unique name: `NBSTestOrder`

Solution components

- **Tables**
  - NBS Test Order

Solution: NBS Project

Unique name: `NBSProject`
Description

> Hide not usable buttons

Solution components

- **Tables**
  - NBS Project

Solution: NBS PreliminaryTest

Unique name: `PreliminaryTest`

Solution components

- **Tables**
  - NBS Preliminary Testing
  - NBS Project

Solution: Backing Type

Unique name: `BackingType`

Solution components

- **Tables**
  - NBS Backing Type Dictionary
  - NBS Bullet Type Dictionary
  - NBS Cartridge Type Dictionary
  - NBS Powder Type Dictionary
  - NBS Test Protocol Template

Solution: NBS Model-Driven

Unique name: `NBSModelDriven`

Solution components

Solution: NBS Apps

Unique name: `NBSApps`

Solution components

- **Apps**
  - NBS Tester
  - NBS Construction Creator
  - NBS Pattern Picker
  - NBS Copy Test Order

Solution: remove dependencies

Unique name: `removedependencies`

Solution components

- **Tables**
  - NBS FREC2 RND Orders
  - NBS Project
  - NBS Institute
  - NBS Product
  - NBS Operation
  - Account

Solution: NBS Migration

Unique name: `NBSMigration`

Solution components

- **Tables**
  - NBS Ballistic System
  - NBS Product
  - NBS ICW Products

Solution: NBS Tester

Unique name: `NBSTester`

Solution components

- **Tables**
  - R&DOrderView
  - NBS Test Order
  - NBS Project
  - NBS Client
  - NBS Institute
  - NBS Ballistic System
  - NBS Test Protocol Template
  - NBS Standard Names Dictionary
  - NBS Product
  - NBS Sample
  - NBS Test Action
  - NBS Photo
  - NBS Tested Standard Detail
  - NBS Geometry
  - NBS Test Compound
  - NBS ICW Products
  - NBS Bullet Type Dictionary
  - NBS Cartridge Type Dictionary
  - NBS Powder Type Dictionary
  - NBS Backing Type Dictionary
  - NBS Material
  - NBS Material stack
  - NBS Construction

- NBS Construction Material Stacks Stitchings
- NBS R Table
- **Apps**
  - NBS Tester

Solution: Construction Creator Model Driven

Unique name: `ConstructionCreatorModelDriven`

Solution components

- **Tables**
  - NBS Pre-Cut Patterns
  - NBS FRECII Tool Type
  - NBS Cartridge Type Dictionary
  - NBS Powder Type Dictionary
  - NBS IFS MATERIALS
  - Account
  - NBS Construction
  - NBS Construction Material Stacks Stitchings
  - NBS ICW Products
  - NBS Material
  - NBS Material stack
  - NBS MaterialStackAndConstraction
  - NBS Operation
  - NBS Backing Type Dictionary
  - R&DOrderView
  - NBS Project
  - NBS Test Compound
  - NBS Bullet Type Dictionary
  - NBS Ballistic System
  - NBS Geometry
  - NBS Photo
  - NBS Product
  - NBS Sample
  - NBS Standard Names Dictionary
  - NBS Test Protocol Template
  - NBS Tested Standard Detail
  - NBS Test Action
  - NBS Test Order
  - NBS Program
  - NBS Supplier
  - NBS Preliminary Testing
  - NBS R Table
  - NBS FREC2 RND Orders
  - IFS MATERIALS V3
  - NBS Group Order
- **Apps**
  - NBS Product Viewer
  - NBS Copy Test Order
  - ConstructionCreator_DefaultCommandLibrary

Solution: NBS Database

Unique name: `NBSDatabase`

Solution components

- **Tables**
  - NBS Bullet Type Dictionary
  - NBS Backing Type Dictionary
  - NBS Ballistic System
  - NBS Construction
  - NBS Cartridge Type Dictionary
  - NBS Client
  - NBS Construction Material Stacks Stitchings
  - NBS ICW Products
  - NBS Geometry
  - NBS Institute
  - NBS Material
  - NBS Material stack
  - NBS MaterialStackAndConstraction
  - NBS Operation
  - NBS Photo
  - NBS Powder Type Dictionary
  - NBS Product
  - NBS Test Protocol Template
  - NBS Test Action
  - NBS Project
  - NBS Sample
  - NBS Test Compound
  - NBS Standard Names Dictionary
  - NBS Test Order
  - NBS Tested Standard Detail
  - R&DOrderView
  - Account
  - NBS Program
  - NBS R Table
  - NBS FREC2 RND Orders

Solution: NBS Data Base for migration

Unique name: `NBSDataBaseformigration`

Solution components

- **Tables**
  - Account
  - Comment
  - IFS MATERIALS V3
  - NBS Backing Type Dictionary
  - NBS Ballistic System
  - NBS Bullet Type Dictionary
  - NBS Cartridge Type Dictionary
  - NBS Client
  - NBS Construction
  - NBS Construction Material Stacks Stitchings
  - NBS FRECII Tool Type
  - NBS Geometry

- NBS Group Order
- NBS ICW Products
- NBS IFS MATERIALS
- NBS Institute
- NBS Material
- NBS Material stack
- NBS MaterialStackAndConstraction
- NBS Operation
- NBS Photo
- NBS Powder Type Dictionary
- NBS Pre-Cut Patterns
- NBS Product
- NBS Program
- NBS Project
- NBS R Table
- NBS Sample
- NBS Standard Names Dictionary
- NBS Supplier
- NBS Test Action
- NBS Test Compound
- NBS Test Order
- NBS Test Protocol Template
- NBS Tested Standard Detail
- Note
- NBS FREC2 RND Orders
- testGH
- R&DOrderView

Solution: NFM BallisticDB

Unique name: `NFMBallisticDB`

Solution components

- **Tables**
  - NBS Backing Type Dictionary
  - NBS Powder Type Dictionary
  - NBS Sample
  - NBS Material
  - NBS Bullet Type Dictionary
  - NBS Project
  - NBS Standard Names Dictionary
  - NBS Ballistic System
  - NBS Product
  - NBS Material stack
  - NBS Operation
  - NBS Test Compound
  - NBS Test Protocol Template
  - NBS Construction Material Stacks Stitchings
  - NBS Tested Standard Detail
  - NBS MaterialStackAndConstraction
  - NBS Geometry
  - NBS Institute
  - NBS Photo

- NBS Test Order
- NBS Cartridge Type Dictionary
- NBS Client
- NBS Construction
- NBS ICW Products
- NBS Test Action
- R&DOrderView
- Account
- NBS Test Dashboard ICW Products
- testGH
- **Apps**
  - NBS Tester
  - NBS Pattern Picker

Solution: Account

Unique name: `Account`
Description

> Hide not usable buttons

Solution components

- **Tables**
  - Account

Solution: Common Data Services Default Solution

Unique name: `Crb118a`

Solution components

- **Tables**
  - Contact
  - R&DOrderView
  - NBS Test Order
  - Account
  - NBS Project
  - NBS Client
  - NBS Institute
  - NBS Ballistic System
  - NBS Test Protocol Template
  - NBS Standard Names Dictionary
  - NBS Product
  - NBS Sample
  - NBS Test Action
  - testGH
  - Article
  - None
  - NBS Photo
  - NBS Tested Standard Detail
  - NBS Geometry
  - NBS Test Compound
  - NBS Test Dashboard ICW Products
  - NBS ICW Products

- NBS Bullet Type Dictionary
- NBS Cartridge Type Dictionary
- NBS Powder Type Dictionary
- NBS Backing Type Dictionary
- None
- User
- NFMOM
- NBS Material
- NBS Operation
- NBS Material stack
- NBS Construction
- NBS MaterialStackAndConstraction
- NBS Construction Material Stacks Stitchings
- NBS Program
- NFM OM SNAP
- IFS Materials V2
- NFM CAPEX V2
- IFS MATERIALS V3
- Query
- IFS TEMPERATURES V2
- NBS FRECII Tool Type
- NBS R Table
- NFM_Rejestr_reklamacji_kooperanta
- NBS IFS MATERIALS
- NFM Rejestr reklamacji do kooperanta
- PIM Product Information
- NBS Preliminary Testing
- NBS FREC2 RND Orders

2.4 Reports

One of the tasks for this project was to review all of the Power BI Reports used in the NBS Workspace. Each report has been reviewed and described in detail.

Here is a comprehensive inventory of all the reports in the NBS Workspace. Each report contains a description, a list of pages available, filters available, graphs used in the report, and tables used by the report.

2.4.1 List of Reports Related to NBS

Report name	Semantic model used
Count of Tested Samples	Count of Tested Samples
Pressed plates count	Pressed plates count
NBS Report Test Range Monitor PL	NBS Report_Test Range Monitor
NBS Report_Test Range Monitor	NBS Report_Test Range Monitor
NBS Report	NBS Report
NBS BSR v1	NBS Report
NBS Report_Eabs analysis	NBS Report
NBS Report_Eabs analysis_Terje_cleaned2	NBS Report

2.4.2 Inventory of Reports Related to NBS

This section includes a detailed inventory of all reports related to NBS, including descriptions, pages, filters, and data sources for each report.

Report: Count of Tested Samples

This report provides an overview of ballistic tests amount categorized by client and project, using metrics like PBFS and V50. The report includes filters for date, project, and client. The report contains two pages: HB for hard ballistics and SB for soft ballistics.

Configured by: Anders Wien
Semantic model used: `Count of Tested Samples`

Pages available:

- HB
- SB

Filters available:

- Date
- Project
- Client

Graphs / Plots used:

- **Graph name**: Hard Ballistic Tested Count

  Shows the total count of ballistic tests performed on hard ballistics divided to V50 and PBFS, categorized by client and project.

- **Graph name**: Soft Ballistic Tested Count

  Shows the total count of ballistic tests performed on soft ballistics divided to V50 and PBFS, categorized by client and project.

Tables used in report:

- `Account`
- `CostOfTest`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

Report: Pressed plates count

This report provides a detailed overview of pressed ceramic prototypes, categorized by project and product. It includes key metrics such as the count of raw material lists, vacuum bags, and total counts for each product under various projects. Users can filter the data by ordered and delivered dates, project, owner, and invoicing status. The report also includes a page for non-ceramic prototypes.

Configured by: Anders Wien
Semantic model used: `Pressed plates count`

Pages available:

- Ceramic
- Non-Ceramic

Filters available:

- Ordered Date
- Delivered Date
- Project
- Owner
- Invoicing Status

Graphs / Plots used:

- **Graph name**: Count of pressed prototypes | Ceramic

  > Shows the total number of pressed plates, categorized by project and product alongside raw materials list and pressing type.

- **Graph name**: Count of pressed prototypes | Non-ceramic

  > Shows the total number of pressed plates, categorized by project divided by pressing types such as helmet mould, uniaxial plate mould or vacuum bag.

Tables used in report:

- `Account`
- `CostOfTest`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_nbsfrec2rndorderses`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `craab_nbstooltypes`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`
- `SystemUser`

Report: NBS Report Test Range Monitor PL

> This report is a detailed test log, capturing test parameters such as timestamp, project name, ballistic system, shot number, stop indicators, BFS depth, projectile details, angle, velocity, and drop test results. It is designed to track test results.

Configured by: Krzysztof Dzwoniarski

Semantic model used: `NBS Report_Test Range Monitor`

Graphs / Plots used:

- **Graph name**: Test log

  > Detailed test log, capturing test parameters such as timestamp, project name, ballistic system, shot number, stop indicators, BFS depth, projectile details, angle, velocity, and drop test results. It is designed to track test results.

Tables used in report:

- `Account`

- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

Report: NBS Report_Test Range Monitor

> This report provides a comprehensive view of test range activities. It visualizes key metrics such as incoming orders, backlog, samples tested, and threats tested over time. The report includes various sections: Year to Date Overview displays incoming orders and samples categorized by their status (such as cancelled, received, or shipped) and visualizes the backlog and the oldest open orders. The Samples Tested section is a visual representation of the number of samples tested, categorized by client and project. The Threats Tested section provides a visual representation of the number of threats tested, broken down by threat type. The Last 2 Weeks Overview focuses on recent test activities, including the number of samples and threats tested. BFS Depth and Stanag V50 Measurements sections display graphs showing BFS depth measurements and V50 measurements for different ballistic systems and constructions. The Construction List section contains a detailed list of ballistic systems, constructions, and material stacks with associated weights and thicknesses. Finally, the Test Log provides a comprehensive log of individual test samples, including details such as timestamp, project name, ballistic system, BFS depth, projectile used, and other test parameters. The report is fully interactive.

Configured by: Anders Wien
Semantic model used: `NBS Report_Test Range Monitor`
Graphs / Plots used:

- **Graph name**: Year to Date Overview

  > Visualizes incoming orders and samples by their status, along with backlog and oldest open orders.

- **Graph name**: Samples Tested

  > Displays the number of samples tested, categorized by client and project.

- **Graph name**: Threats Tested

  > Provides a visual representation of the number of threats tested, broken down by threat type.

- **Graph name**: BFS Depth Measurements

  > Shows BFS depth measurements for different ballistic systems.

- **Graph name**: Stanag V50 Measurements

  > Displays V50 measurements for various constructions.

- **Graph name**: Construction list

  > A detailed list of ballistic systems, their constructions, and material stacks with associated weights and thicknesses

- **Graph name**: Test log

> Detailed test log, capturing test parameters such as timestamp, project name, ballistic system, shot number, stop indicators, BFS depth, projectile details, angle, velocity, and drop test results. It is designed to track test results.

Tables used in report:

- `Account`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

Report: NBS Report

> This report provides a comprehensive overview of ballistic tests, including detailed information about ballistic systems, construction, material stacks, and individual test results. It includes filters for project name, test date, test institute, and ballistic system. The report is divided into several sections including: 1) A detailed breakdown of ballistic systems and their associated construction and material stacks, 2) A table of test results showing parameters like projectile type, angle, conditioning temperature, BFS depth, and V50 values, 3) Graphical representation of PBFS distribution by ballistic system with drill-down capabilities, 4) A history of Stanag V50 values, and 5) A log regression graph of speed versus probability.

Configured by: Anders Wien
Semantic model used: `NBS Report`
Pages available:

- Ballistic Systems Overview
- Test Results
- PBFS Distribution
- Stanag V50 History
- Log Regression

Filters available:

- Project Name
- Ballistic System
- Test Date
- Test Institute

Graphs / Plots used:

- **Graph name**: Test results

  > Detailed test log, capturing test parameters such as sample ID, serial number, shot number, if valid indicator, projectile details, angle, velocity, stop indicator, BFS depth, BFS diameter, test condition, clay temperature, drop test results, room temperature, humidity, projectile weight, type of cartridge, muzzle distance, powder type, powder weight, project name, ballistic system and timestamp.

- **Graph name**: PBFS Distribution

  > Displays PBFS distribution by ballistic system with drill-down capabilities.

- **Graph name**: Stanag V50 History

  > Shows the history of Stanag V50 values.

- **Graph name**: Log Regression

  > Graph of speed versus probability of V50.

Tables used in report:

- `Account`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

Report: NBS BSR v1

> This report provides comprehensive insights into the ballistic systems, materials, and test results. It includes sections for ballistic system overview, material stack details, test orders, and test samples. The report also features various charts such as PBFS distribution, Stanag V50 history, and density of PBFS. Additionally, there is a section for key influencers that analyzes the most important factors impacting V50 values.

Configured by: Bartłomiej Bielski
Semantic model used: `NBS Report`
Pages available:

- Key influencers
- Ballistic system reports

Filters available:

- Ballistic System
- Product
- Construction
- Order Status
- Projectile
- Test Order ID
- Project Name
- Date Range
- Valid
- Shot Number
- V50 Value Increase/Decrease

Graphs / Plots used:

- **Graph name**: Material stack

  > Table of material stacks with their price, weight and thickness.

- **Graph name**: Test orders

  Detailed table of test orders.

- **Graph name**: Test samples

  Table of test samples with parameters like serial number, sample weight, sample thickness and depth of cut.

- **Graph name**: Test results

  Detailed test results table.

- **Graph name**: PBFS Distribution

  Shows PBFS distribution by ballistic system with drill-down capabilities.

- **Graph name**: Stanag V50 History

  Displays the historical values of Stanag V50.

- **Graph name**: Density of PBFS

  Visualizes the density distribution of PBFS across different samples.

- **Graph name**: PBFS in mm (count of panels)

  Visualizes the count of panels per milimeter.

- **Graph name**: Key Influencers

  Analyzes the factors most influential in changing V50 values.

Tables used in report:
- `Account`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

Report: NBS Report_Eabs analysis

This report provides detailed analysis on the efficiency and performance of ballistic systems. It includes several visualizations such as cost efficiency vs thickness efficiency, Eabs(V50) vs thickness, and other relevant metrics like AD efficiency. It also features filtering options by projectile type to analyze the impact of different projectiles on the ballistic system performance.

Configured by: Anders Wien
Semantic model used: `NBS Report`

Filters available:
- Projectile Type

- Ballistic System

Graphs / Plots used:

- **Graph name**: Cost Efficiency vs Areal Density Efficiency

  > Compares the cost efficiency with areal density efficiency across different ballistic systems.

- **Graph name**: Cost Efficiency vs Thickness Efficiency

  > Compares the cost efficiency with thickness efficiency across different ballistic systems.

- **Graph name**: Eabs(V50) vs Thickness

  > Plots Eabs(V50) against the thickness of the material for given projectile.

- **Graph name**: Eabs(V50) vs Material Cost

  > Plots Eabs(V50) against the material cost of the material for given projectile.

- **Graph name**: Eabs(V50) vs Aerial Density

  > Plots Eabs(V50) against the areal density of the material for given projectile.

Tables used in report:

- `Account`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

Report: NBS Report_Eabs analysis_Terje_cleaned2

This report provides an in-depth analysis of ballistic systems by evaluating various metrics such as cost efficiency, thickness efficiency, and Eabs (V50) against factors like thickness, material cost, and AD efficiency. The report consists of multiple pages, each focusing on different aspects of ballistic performance. Key pages include 'E50 & V50 vs AD,' 'AD efficiency vs Ballistic system,' 'Cost efficiency vs Ballistic system,' 'BFS and bullet speed vs Material,' 'BFS and cost vs Material,' and 'BFS and Area density.' The visualizations allow for detailed comparisons across different ballistic systems, aiding in decision-making regarding materials and constructions.

Configured by: Grzegorz Huk
Semantic model used: `NBS Report`

Pages available:

- Page 1
- E50 & V50 vs AD
- AD Efficiency vs Ballistic System
- Cost Efficiency vs Ballistic System
- BFS and Bullet Speed vs Material

- BFS and Cost vs Material
- BFS and Area Density

Filters available:

- Projectile
- Ballistic System
- Bullet Weight
- Hit Angle
- Test Goal Type
- Conditioning Temperature
- Backing Type
- Depth of Cut

Graphs / Plots used:

- **Graph name**: Cost Efficiency vs AD2 Efficiency

  Scatter plot showing the relationship between cost efficiency and AD2 efficiency for various ballistic systems, with a trend line indicating correlation.

- **Graph name**: Cost Efficiency vs Thickness Efficiency

  Scatter plot showing the relationship between cost efficiency and thickness efficiency for various ballistic systems, with grid lines to indicate ranges.

- **Graph name**: Eabs(V50) vs Thickness

  Scatter plot illustrating the relationship between absorbed energy at V50 and thickness for various ballistic systems, with a trend line showing correlation.

- **Graph name**: Eabs(V50) vs Material Cost

  Scatter plot showing the relationship between absorbed energy at V50 and material cost for different ballistic systems using the PS Ball projectile, with a trend line.

- **Graph name**: Eabs(V50) vs Area Density (AD)

  Scatter plot illustrating the relationship between absorbed energy at V50 and Area Density (AD) for various ballistic systems, with a trend line indicating correlation.

- **Graph name**: Area Density vs E50

  Scatter plot showing the relationship between Area Density and E50 for various ballistic systems, with a trend line to show the correlation.

- **Graph name**: AD2 Efficiency by Ballistic System and Name

  Bar chart displaying AD2 efficiency for various ballistic systems, color-coded by projectile name, showing performance in energy absorption.

- **Graph name**: Cost Efficiency vs V50 by Ballistic System

  Bar chart showing cost efficiency of various ballistic systems with a line plot overlay for V50 value, allowing comparison of cost efficiency and ballistic performance.

- **Graph name**: BFS and Projectile Velocity for 7.62 Projectile

  Graph visualizing Backface Signature (BFS) and projectile velocity for various ballistic systems using a 7.62 caliber projectile, comparing BFS depth and speed.

- **Graph name**: Area Weight vs. BFS for Various Ballistic Systems

  Scatter plot showing the relationship between area weight and average BFS depth for different ballistic systems, with a trend line indicating the correlation.

- **Graph name**: Min BFS, Max BFS, and Bullet Speed by Ballistic System

> Graph showing minimum and maximum BFS in millimeters and bullet speed for various ballistic systems, comparing BFS and bullet speed performance.

- **Graph name**: Min BFS, Max BFS, and Area Density by Ballistic System

> Graph showing minimum and maximum BFS and area density for various ballistic systems, analyzing the relationship between BFS and area density.

Tables used in report:

- `Account`
- `cr675_NBSConstruction`
- `cr675_NBSConstructionMaterialStacksStitchings`
- `cr675_NBSICWProducts`
- `cr675_NBSMaterial`
- `cr675_NBSMaterialstack`
- `cr675_NBSStitching`
- `cr675_Project`
- `cr675_TestCompounds`
- `cr675_TestDashboardAmmoTypeDictionary`
- `cr675_TestDashboardGeometries`
- `cr675_TestDashboardSample`
- `cr675_TestDashboardStandard`
- `cr675_TestDashboardTestProcedment`
- `cr675_TestOrder`
- `NBS Ballistic System`
- `NBS Product`
- `StandardDetails`

3 Data Quality Analysis

As part of the NBS system exploration, a comprehensive analysis of the data stored in the system was conducted. This section highlights the major data quality issues identified during the analysis, including data incompleteness, inconsistencies, and duplicates. These issues present significant challenges to the system's reliability and make data analysis difficult and time-consuming.

3.1 Data Collection and Methodology

The data has been collected using the Dataverse Web API as well as the Power BI Web API. I have created a Python script, `api_connect.py`, which consists of a `DataverseConnector` class as well as a `connect_to_powerbi` function. The script handles the connection to APIs and user authentication. For more details on this script, refer to the Appendices. The code is well documented and commented.

The data for each table has been saved to `.csv` files, which are available in the Appendices. These files serve as the primary dataset for the analysis conducted in this document.

...

3.2 Data Quality Issues

The overall data quality of the whole dataset is very poor. The data cleaning and preparation processes for any analysis are tedious and time-consuming due to a number of issues. This section gives an overview of common issues found while exploring and analyzing the NBS data.

3.2.1 Nondescriptive Logical Column Names

Many columns have unclear or incorrect logical names, making it difficult to understand their purpose. A common issue is the use of column names ending in `...id` that store names, not unique IDs as expected.

Example
The `cr675_testorder` table has a column `cr91b_depthofpenetrationinmm`, which stores boolean values (`True`/`False`) instead of numeric data. Upon investigation, this column was found to indicate whether the test order was for hard or soft ballistics. A more appropriate name would be `cr91b_ishardballistics`.

3.2.2 Inconsistent Column Formats

Most categorical columns suffer from inconsistent formats, making analysis difficult or impossible.

Example

The `cr675_testdashboardammotypedictionary` table contains a `cr675_bulletcalliber` column, which is of `string` type. Example values include:

BulletCaliber
9 x 19 mm
5.56
2,642mm
7,62
7,62x39 AK47
308 Win.
.40 / 10 mm
.357 in

This data is not useful for analysis without extensive cleaning and standardization. Different formats, additional information stored alongside the caliber (e.g., `AK47`), ambiguities in values and units make it very hard to analyze.

For data to be useful and ready for analysis, it needs to be standardized and consistent. The `cr675_bulletcalliber` should store a caliber value in one unit of choice (e.g., millimeters or inches) with consistent formatting. Using the above example, the proper data should look like this:

BulletCaliber
9.00
5.56
2.64
7.62
7.62
7.82
10.00
9.00

3.2.3 Wrong Column Types

Many columns are stored as strings when they should contain uniform numeric values, further complicating analysis.

3.2.4   Duplicate Information

Several columns contain redundant information. In some cases, multiple columns needed to be merged to obtain meaningful data during the exploration process.

Example
Using the same table as above, it contains columns `cr675_produceraccount`, `cr675_name`, and `cr675_bulletnamewithproducername`. The last one is just a join of the two previous columns and is redundant. Moreover, most of the `cr675_produceraccount` column is empty, so `cr675_bulletnamewithproducername` contains just a duplicate of `cr675_name` with a colon appended.

3.2.5   High Percentage of Empty Columns

A significant portion of the columns are largely empty, with minimal data recorded. This indicates a lack of enforcement of data entry standards and contributes to the overall data incompleteness.

Example
In the `cr675_testdashboardprocedement` etable, 13 custom columns have less than 50% data completeness, with six of these columns entirely empty.

3.2.6   Lack of Required Fields

Few columns are marked as "required," resulting in significant data gaps. This exacerbates the incompleteness of the dataset and reduces its overall reliability.

3.2.7   Redundant Tables and Columns

Some tables and columns appear to be redundant, either due to duplication or subsetting of data from other tables. This redundancy adds unnecessary complexity to the data model.

3.3   Summary

The data is mostly unusable, even for data cleaning. The lack of enforcement of data input results in incomplete datasets. The lack of standardization of formatting and column types leads to data being mostly stored in text, often with comments and additional redundant information, which is not ideal for analysis.

It seems that these tables are being used by the engineers like Excel spreadsheets when they should be treated as datasets. It is mostly useless to collect data in this manner because it cannot be analyzed easily, or the cleaning process requires verifying every row and cross-referencing documentation or consulting an expert on domain knowledge.

4 Code Documentation

4.1 Scripts Overview

During the project I wrote a collection of Python scripts which I used to automate data collection, processing, working with data as well as even generate parts of documentation. I categorized them into two groups: **Data Collection and Processing** as well as **Markdown Generation**.

4.2 Data Collection and Processing Scripts

4.2.1 `api_connect.py`

This Python script provides functionalities to connect and retrieve data from Microsoft Dataverse and Power BI using the OData API and MSAL (Microsoft Authentication Library). It offers tools to interact with both services, manage authentication, and handle data requests.

Main components

1. `DataverseConnector` class manages connection and data retrieval from Microsoft Dataverse using OData Web API

2. `connect_to_powerbi` function handles connections to Power BI API for retrieving data

Dependencies

Before trying to use the script, ensure that the following Python packages are installed by running

```
pip install msal requests pandas
```

Usage Example

For Dataverse

```
connector = DataverseConnector("path/to/auth_details.json")
data = connector.obtainJson("accounts")
print(data)
```

For Power BI

```
cdata = connect_to_powerbi("groups", "path/to/auth_details.json")
print(data)
```

4.2.2 `download_data.py`

This script is designed to fetch data from Microsoft Dataverse, process it, and save it in CSV format. It uses the `DataverseConnector` class from `app_connect.py` to authenticate and retrieve data from the Dataverse Web API.

Usage Example

To execute the script, run it as is, or modify the `entities_to_process` and `output_directory` variables.

4.2.3 `table_inventarization.py`

This script performs a comprehensive inventory of given tables within Microsoft Dataverse. It retrieves metadata, attributes, and relationships for a set of specified tables and outputs this information into a JSON file. The resulting inventory can be used for further analysis or reporting on the structure and contents of the tables.

Usage Example

This script is designed to run as is, but if you need to modify the list of tables to process or change the output directory, you can update the `entities_to_process` list or the path where the JSON is saved.

4.2.4 `solution_inventarization.py`

This script is responsible for gathering and inventorying metadata about solutions and their components. The data is retrieved, processed, and saved as a JSON file. This provides insight into various components related to a solution such as entities, apps, web resources, and more.

Usage Example

To run the script, simply execute it as is, however if you need to modify the list of solutions to process or change the output directory, you can update the `solutions_to_process` list or the path where the JSON is saved.

4.3 Markdown Generation Scripts

These are the helper scripts I used to generate parts of this documentation from json inventories. They are not crucial to understand but I documented them either way.

Each script follows a similar pattern

1. Read JSON data

2. Generate raw Markdown

3. Save Markdown as .md file

4.4 Note

Each of these scripts are documented in the form of Python Docstrings as well as comments within their respective files.

5 Recommendations

5.1 Continue Data Profiling

Data profiling should be an ongoing process to identify and address issues across all tables. Each table should be inspected individually, and issues should be noted. For example, the `tables_inventory.json` file can be extended with detailed issue summaries for each table. Example:

```json
[
    {
        "display-name": "NBS_Test_Order",
        "logical-name": "cr675_testorder",
        "set-name": "cr675_testorders",
        "primary-id": "cr675_testorderid",
        "primary-name": "cr675_orderid",
        "attribute-count": 90,
        "custom-attribute-count": 72,
        "row-count": 3394,
        "issues-summary": [
            "Issue_1",
            "Issue_2",
            "Issue_3"
            // More issues...
        ],
        "attributes": [
            {
                "display-name": "Client",
                "logical-name": "cr675_client",
                "description": "cr675_testorder_-_cr675_client",
                "data-type": "Lookup",
                "is-custom": true,
                "statistics": {
                    "non-null-count": 3394,
                    "unique-values-count": 9,
                    "top-5-most-frequent-values": {
                        "NFM_P_CC205_RDB_Ballistic": 1161,
                        "NFM_P_CC107_QC": 1143,
                        "NFM_P_CC208_RDB_Strategic": 844,
                        "NFM_P_CC210_HJELM": 147,
                        "NFM_US_LLC": 60
                    }
                },
                "issues": [
                    "Issue_1",
                    "Issue_2",
                    "Issue_3"
                    // More issues...
                ]
            }
            // More columns...
        ],
```

```
        "relationships": [
            {
                "related-table": "systemuser",
                "relationship_type": "many-to-one",
                "is-custom-relationship": false,
                "local-attribute": "createdby",
                "foreign-attribute": "systemuserid"
            }
            // More relationships...
        ]
    }
    // More tables...
]
```

5.2 Migrate NBS System from Default Environment

The NBS system should be migrated from the `NFM Group Def` environment to the dedicated `NFM Group NBS DEV` environment. This migration will improve data management, security, and scalability, ensuring a more stable and efficient system.

5.3 Refactor and Standardize Data

Tables and columns with incorrect data types should be refactored. Standardization efforts should focus on ensuring that columns are stored in the correct formats to make data analysis easier and more reliable.

5.4 Consolidate Redundant Tables and Columns

Redundant tables and columns should be merged or removed to simplify the data model. Consolidating overlapping tables will reduce complexity and improve overall system performance.

5.5 Implement Required Fields and Validation

Critical columns should be marked as "required" to improve data completeness. Additionally, validation rules should be implemented to ensure consistent data entry, particularly for numeric values, dates, and key identifiers.

5.6 Remove Unused Input Fields

Input fields which are not in use should be removed as they don't contribute to the system. It is recommended to conduct an audit of all current input fields to identify which ones are not in use, and to then remove them. This will not only clean up the user interface but also improve overall system performance by reducing redundant metadata in the database.

5.7   Clean Mostly Filled Dictionaries

Many dictionaries in the system, such as the ones used for threats, clients or ammunition, are mostly filled, but they suffer from inconsistent or incomplete data entries. These dictionaries should be reviewed and cleaned. Once cleaned, implement restrictions on who can add new entries to these dictionaries. Additionally, implementing strict data validation rules during entry is recommended.

5.8   Use External Registers Where Possible

Where applicable, external registers or reference data should be used to avoid data redundancy. For example, the project list or other table registers that are externally maintained can be linked directly to NBS. This will improve the data's reliability and consistency.

6 Appendices

The appendices provide supplementary materials and references that were used throughout this documentation. These resources are essential for anyone wishing to validate the findings or extend the analysis.
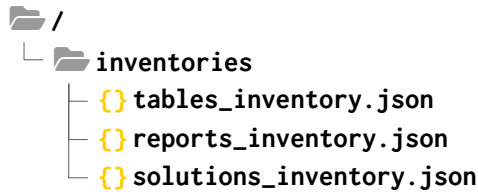
6.1 Appendix 1: Data Files

The raw data exported from the NBS system is available in `.csv` format in the `data` folder. These files contain all relevant columns formatted for human readability.

```
📂 /
└── 📂 data
    ├── 📄 cr675_testorder.csv
    ├── 📄 cr675_testdashboardtestprocedment.csv
    ├── 📄 cr675_ifsmaterialsv3.csv
    ├── 📄 cr675_nbsconstructionmaterialstacksstitchings.csv
    ├── 📄 cr675_nbsifsmaterials.csv
    ├── 📄 cr675_nbsmaterialstack.csv
    ├── 📄 cr675_testdashboardsample.csv
    ├── 📄 cr675_testcompounds.csv
    ├── 📄 cr675_nbsicwproducts.csv
    ├── 📄 cr91b_nbsrtable.csv
    ├── 📄 cr675_testdashboardballisticsystem.csv
    ├── 📄 cr675_nbsconstruction.csv
    ├── 📄 cr675_testdashboardproduct.csv
    ├── 📄 cr675_nbsfrec2rndorders.csv
    ├── 📄 cr675_nbsstitching.csv
    ├── 📄 cr675_nbsmaterial.csv
    ├── 📄 cr675_testdashboardstandarddetails.csv
    ├── 📄 cr675_testdashboardammotypedictionary.csv
    ├── 📄 cr675_project.csv
    ├── 📄 cr675_testdashboardgeometries.csv
    ├── 📄 craab_nbsgrouporder.csv
    ├── 📄 cr675_nbsmaterialstackandconstraction.csv
    ├── 📄 cr91b_nbsprogram.csv
    ├── 📄 cr675_testdashboardstandard.csv
    ├── 📄 cr675_nbspreliminarytesting.csv
    ├── 📄 cr675_nbstestdashboardbackingtypedictionary.csv
    ├── 📄 cr675_nbstestdashboardcartridgetypedictionary.csv
    ├── 📄 cr675_testdashboardinstitute.csv
    ├── 📄 cr675_orderviewrd.csv
    ├── 📄 craab_nbstooltype.csv
    ├── 📄 cr675_nbstestdashboardpowdertypedictionary.csv
    └── 📄 cr675_testdashboardphotos.csv
```

6.2   Appendix 2: Inventories

The `inventories` folder contains `.json` files that provide a comprehensive listing of the tables, solutions, and Power BI reports used in the NBS system. These inventories serve as an index for anyone working with the system's data.
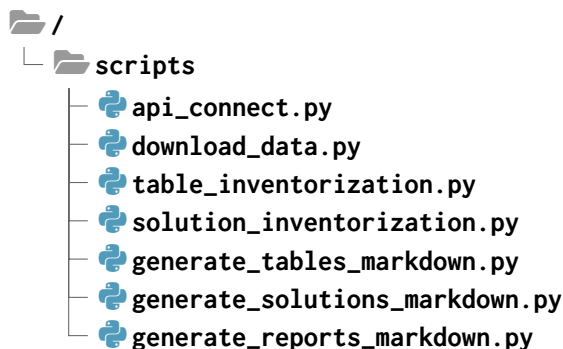
```
📂 /
└── 📂 inventories
     ├── {} tables_inventory.json
     ├── {} reports_inventory.json
     └── {} solutions_inventory.json
```

6.3   Appendix 3: Markdown Files

The following `.md` files available in the `markdown` folder contain the inventories from Appendix 2, programmatically transformed into human-readable markdown files, which can be easily exported to PDF.

```
📂 /
└── 📂 markdown
     ├── M↓ tables_markdown.md
     ├── M↓ reports_markdown.md
     └── M↓ solutions_markdown.md
```
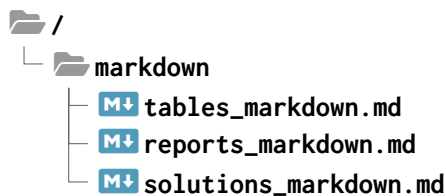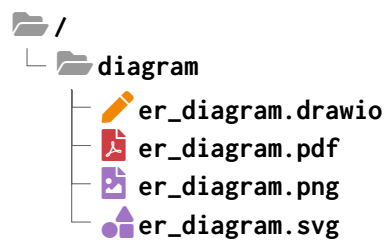
6.4   Appendix 4: Python Scripts

The Python scripts used for API connection and data collection are provided in the `scripts` folder. These scripts facilitate data retrieval, inventory generation, and markdown conversion.

```
📂 /
└── 📂 scripts
     ├── 🐍 api_connect.py
     ├── 🐍 download_data.py
     ├── 🐍 table_inventorization.py
     ├── 🐍 solution_inventorization.py
     ├── 🐍 generate_tables_markdown.py
     ├── 🐍 generate_solutions_markdown.py
     └── 🐍 generate_reports_markdown.py
```

6.5   Appendix 5: Entity Relationship Diagram

A simplified Entity Relationship Diagram (ERD) is available in the `diagram` folder. This diagram shows the key relationships between tables in the system, providing a visual aid for understanding the data structure. It's available in `.png`, `.svg` and `.pdf` formats as well as the original editable `.drawio` file.

```
📂 /
└── 📂 diagram
    ├── 🖊 er_diagram.drawio
    ├── 📕 er_diagram.pdf
    ├── 🖼 er_diagram.png
    └── 🔷 er_diagram.svg
```

6.6 Appendix 6: Glossary of Terms

Term	Definition
Ballistic System	A product or set of products designed for ballistic testing.
Construction	A combination of multiple material stacks in a specific order, often involving different stitching techniques.
Material	The basic ingredient of every ballistic construction.
Material Stack	A group of one or more layers of the same material stacked together to form part of a construction.
Operation	The type of stitching used to bind materials within a material stack or to join different stacks in a construction.
Test Order	A formal request for performing ballistic tests on a specific product or system according to predefined standards and protocols.
V50	A ballistic testing parameter that measures the velocity at which there is a 50% probability that a projectile will penetrate a material.
BFS (Backface Signature)	The depth of deformation caused on the back face of a material when it is struck by a projectile.
PBFS	Perforation-Backface Signature. Interchangable with BFS
Areal Density (AD)	A measure of the weight of a ballistic material or construction per unit area, typically expressed in kg/m².
Power BI	A Microsoft analytics service used to visualize and analyze the data collected from ballistic tests and create reports and dashboards.
Dataverse	A cloud-based data platform used to store and manage data for applications such as the NBS system.
API	Application Programming Interface, used for interacting with Dataverse and Power BI to retrieve data for analysis.
Entity	A table or database object used in Microsoft Dataverse that stores structured data (e.g., `NBS Test Order`, `NBS Material Stack`).

Attribute	A column in an entity that stores specific information about that entity (e.g., `Test Date`, `Projectile Type`).
Test Protocol	A set of predefined steps and conditions under which ballistic tests are conducted.
Uniqueidentifier	A data type used to represent a unique value for identifying tables (e.g., UUID).
Lookup Field	A reference field that allows linking one table to another within Dataverse, helping establish relationships between data.
Primary Key	A unique identifier for each record in a database table, ensuring that each record can be uniquely identified.
Foreign Key	A field that links one table to another, establishing a relationship between the data stored in both tables.
Data Completeness	A measure of how much of the expected data is available in each column, often expressed as a percentage.
Data Profiling	The process of reviewing and analyzing data to assess its quality, including checking for missing, duplicate, or inconsistent data.
Data Inconsistency	Occurs when data does not follow a consistent format or structure, making it difficult to analyze or compare (e.g., different date formats in the same field).
Data Redundancy	The occurrence of duplicate or unnecessary data, which can complicate data storage and analysis.
Data Validation	The process of ensuring that data entered into a system meets predefined criteria for accuracy and consistency.
Entity Relationship Diagram (ERD)	A visual representation of how entities in a system relate to one another, used to understand data structure.
CSV (Comma-Separated Values)	A file format used for saving tabular data where each field is separated by a comma.
Required Field	A column that must contain a value in order for a record to be valid, ensuring that important data is always captured.
Data Incompleteness	When required or important fields in a dataset are missing values, affecting the reliability of the data.

7 Resources and References

7.1 Useful Links

- R&D Ballistic Sharepoint Page
- Power Apps Tables
- Power Apps Solutions
- NBS Power BI Reports
- Construction Creator App
- Test Logging App
- Azure Portal
    - NBS Connector App
    - PowerBI API Connector App

7.2 Documentation Related to Microsoft Services

- Dataverse API Documentation
    - Querying Data
- Power BI API Documentation
    - Creating Microsoft Entra Tenant
    - Registering Microsoft Entra App
    - Editing App Permissions
    - Accessing Power BI via Service Principal
    - Using Power BI API
- Azure Portal App Registrations

7.3 NBS Related Resources

- **Meeting Recordings**:

    - NBS Meeting 2019

- **PowerPoint Roadmap**:

    - NBS Project Roadmap 2020

- **Old Documentation (In attachments `old-documentation` folder)**:

7.4 Ballistics Resources

- R&D Ballistic Repository

    - Ammunition Resources

    - Materials Resources

    - Ballistic Standards Resources

7.5 Tools and Libraries

- Pandas Library Documentation

- Matplotlib Library Documentation

- Seaborn Library Documentation

- MSAL Library Documentation

- Requests Library Documentation

- XRM Toolbox Documentation

    - FetchXML Builder Tool

    - Attribute Explorer Tool

    - Entity Relation Diagram Creator Tool