

COE CST Tenth Annual Technical Meeting

Spaceport Operations

Online Reference Guide

Task 380-NMSU

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New Mexico State University

Students:

Richard (Chase) Bailey and
Miles Stapleton



Center of Excellence for
Commercial Space Transportation



Agenda

- Team Members
- Task Description
- Schedule
- Goals
- Results
- Conclusions, Acknowledgement and Future Work



Team Members

- People
- Principal Investigator: Dr. Patricia Hynes



- Students:



Richard (Chase) Bailey
Junior, Finance & Accounting



Miles Stapleton
Senior, Applied Mathematics

- Research Partner and providing Matching Funds



Mark J. Greby, P.E.
Las Cruces, NM
Lompoc, CA



Task Description

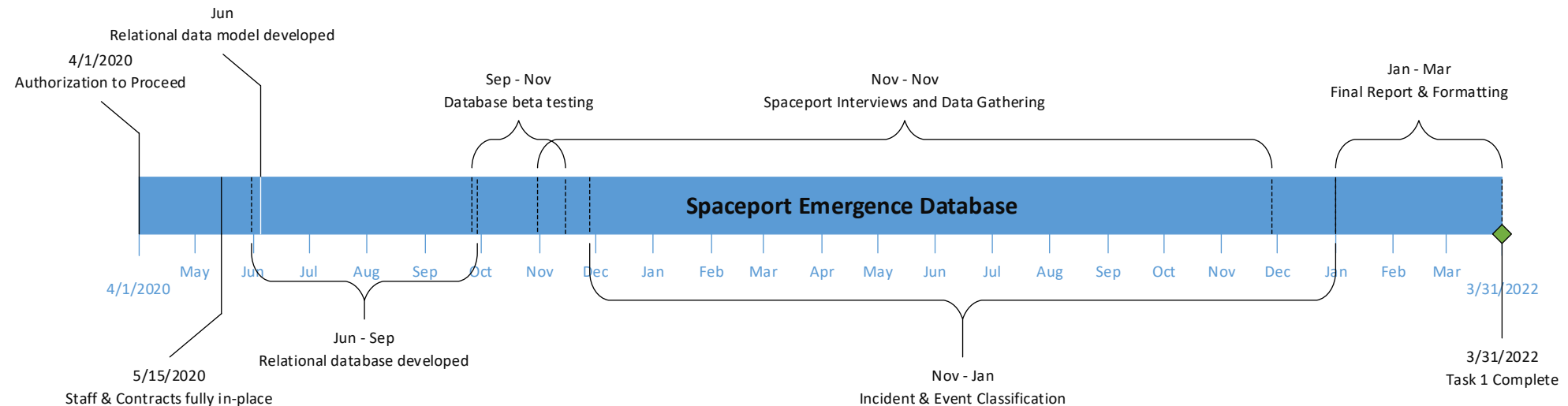


- Task 1: Develop a searchable database of spaceport emergence incidents and events for ongoing FAA research
 - Include the searchable database in the Spaceport Body of Knowledge (BoK) for public use
 - Add this database and tools to the BoK as Category 13
- Task 2: Maintain access to an updated online Spaceport Body of Knowledge for public use: <http://contentdm.nmsu.edu/>

Schedule



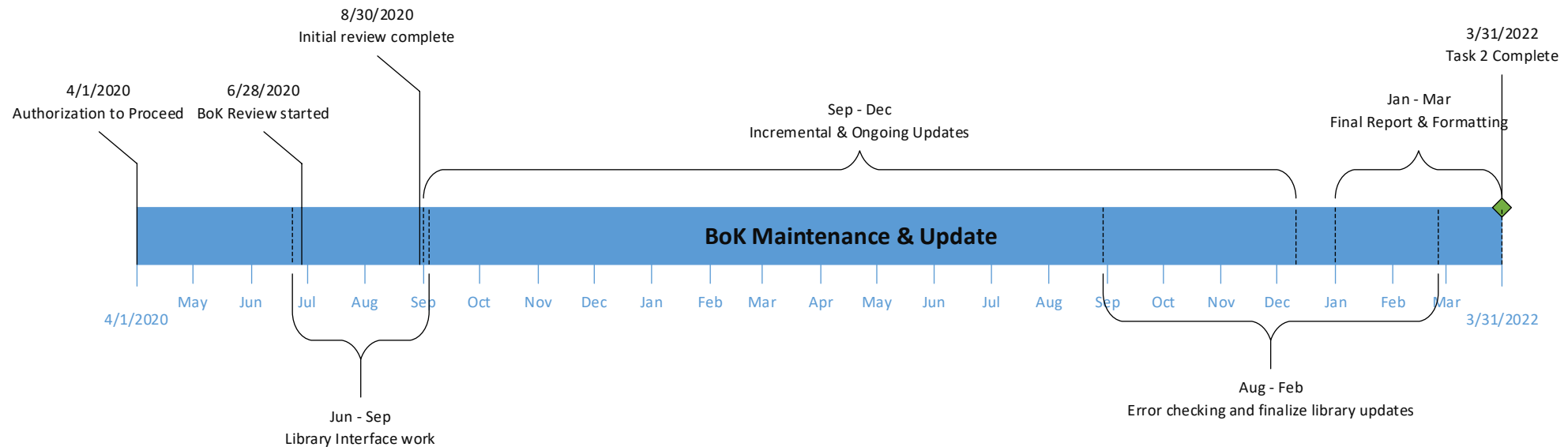
- All work tasks completed by end the 2021. All closeouts, reports, and invoicing completed NLT end of March 2022
- Task 1: Spaceport Emergence database for FAA research



Schedule (continued)



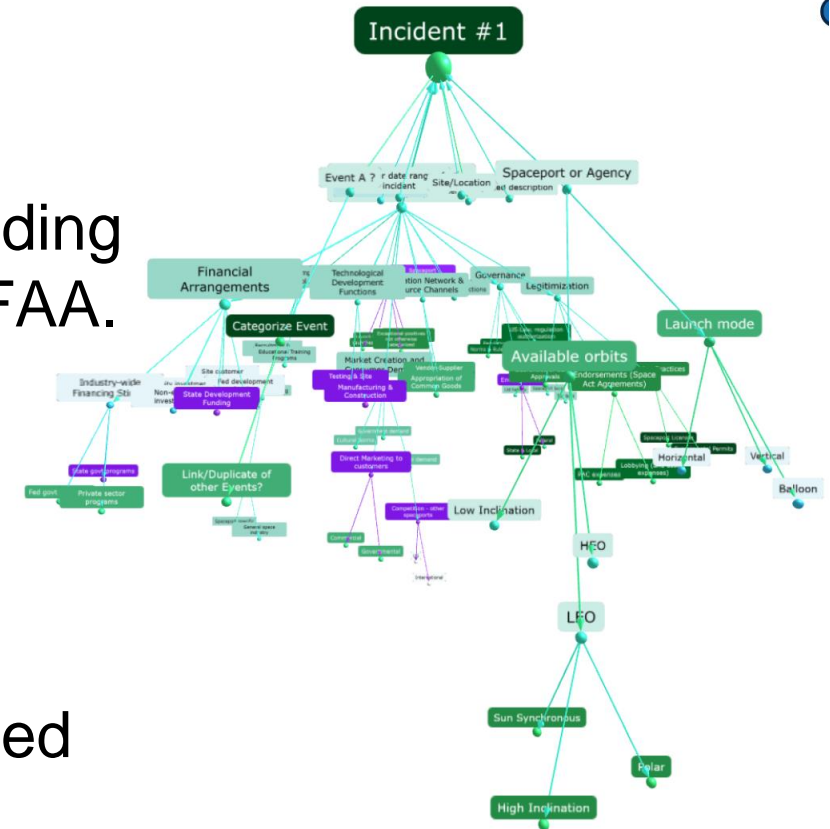
- Task 2: Update and maintenance of the Spaceport Body of Knowledge



Goals

Task 1 – Spaceport Emergence Database

- Create a searchable relational database:
- Through interviews document significant events leading to the establishment of the 12 licensed spaceport FAA.
- Enables government, industry and academia to investigate significant events related to start-up/emergence, safety and operations of FAA licensed spaceports



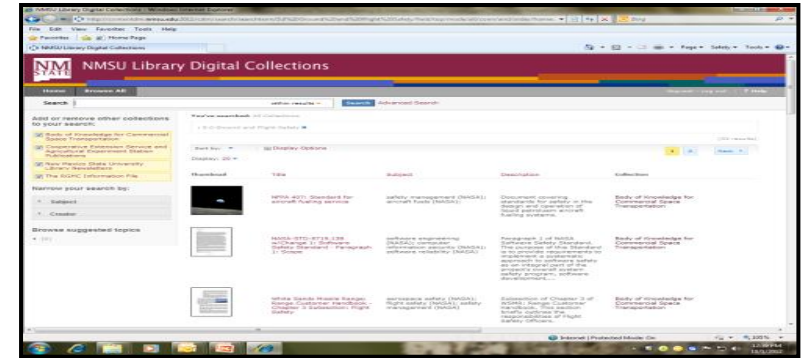
Each incident has a complex set of relational characteristics

BOK Update and Benefits



Task 2 – Spaceport Body of Knowledge (BOK)

- Update & Maintenance
 - 229,984 document opens in the BoK: 3.1.2014 – 9.30.2020
 - 29,709 document opens in 2020 as of 9.20.2020
 - Average of 100 documents opened daily
 - <http://contentdm.nmsu.edu/>

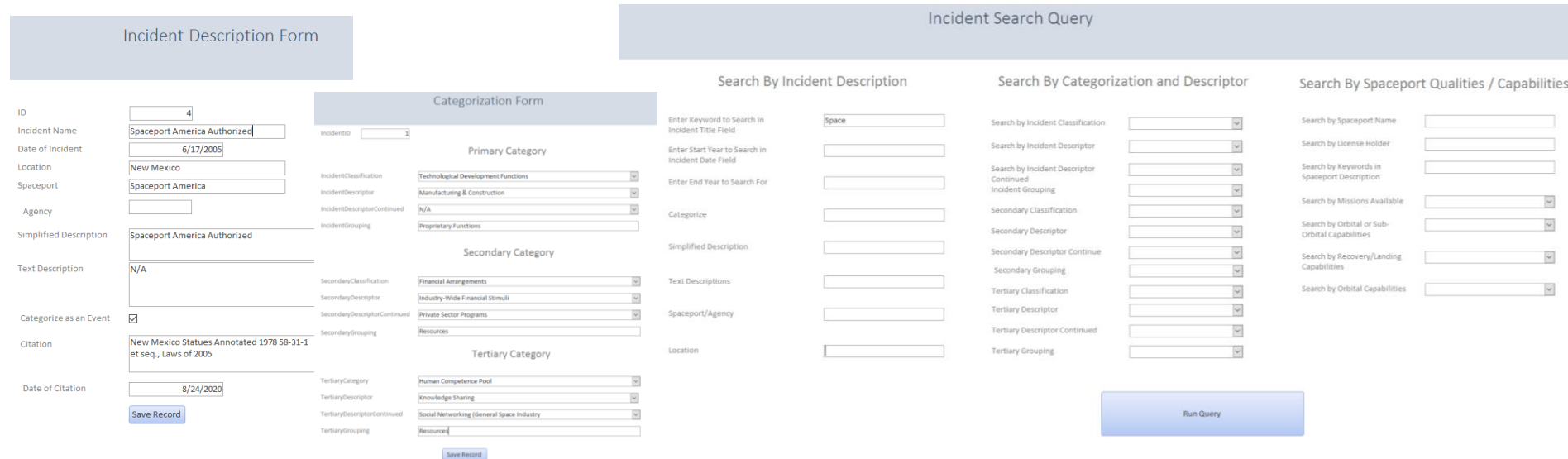


Benefits:

- A comprehensive searchable repository of commercial spaceport information
- Low-cost ongoing website maintenance by the COE research team and NMSU Library that enable growing consistent services for users
- Available 24/7/365
- Has become a vital tool for industry users, educators and internationals

Results

- Database developed and tested



The image displays three screenshots of a web-based database interface. The first screenshot, titled "Incident Description Form", shows a form with fields for ID (4), Incident Name (Spaceport America Authorized), Date of Incident (6/17/2005), Location (New Mexico), Spaceport (Spaceport America), Agency, Simplified Description (Spaceport America Authorized), Text Description (N/A), Categorization as an Event (checked), Citation (New Mexico Statutes Annotated 1978 58-31-1 et seq., Laws of 2005), and Date of Citation (8/24/2020). A "Save Record" button is visible. The second screenshot, titled "Categorization Form", shows a form with fields for IncidentID (1), Primary Category (Technological Development Functions), Secondary Category (Financial Arrangements), and Tertiary Category (Human Competence Pool). A "Save Record" button is also present. The third screenshot, titled "Incident Search Query", shows a search interface with three main sections: "Search By Incident Description" (with fields for keyword, start/end year, and date), "Search By Categorization and Descriptor" (with dropdowns for classification, descriptor, and grouping), and "Search By Spaceport Qualities / Capabilities" (with dropdowns for name, license holder, keywords, missions, orbital capabilities, and recovery/landing). A "Run Query" button is at the bottom.

- “Incident” input forms have been developed and tested
- Database query functions tested and de-bugged
- Initial review of current BoK completed and areas needing updating have been identified
- NMSU library confirmed the ability to archive the interviews and database. Confirmed the ability to add the database to the BoK

Publications, Presentations, Awards, & Recognitions



PUBLICATIONS – None at this time

PRESENTATIONS – None at this time

AWARDS – None at this time

RECOGNITIONS – None at this time

Conclusions and Future Work



- Final Remarks

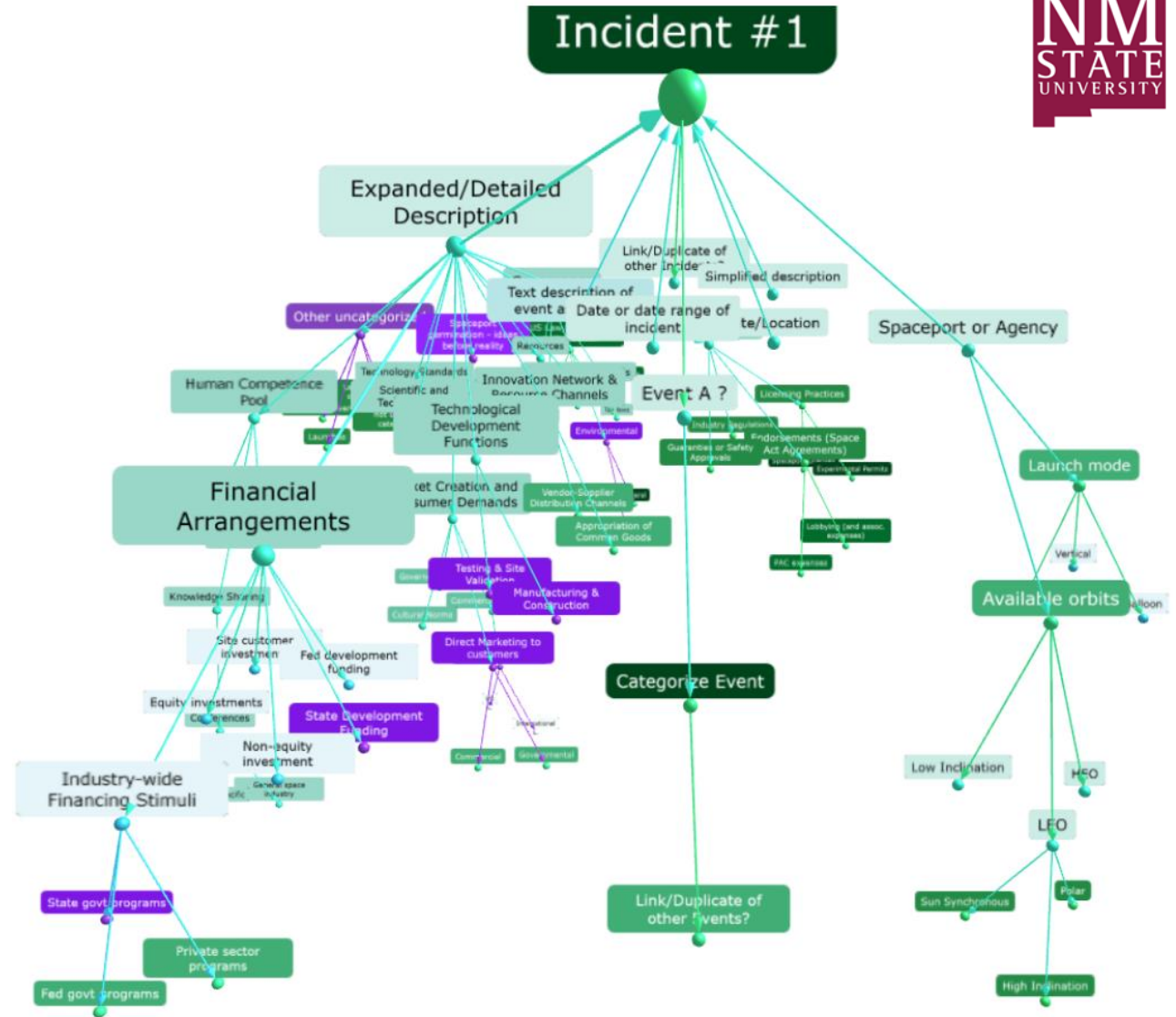
- Acknowledgement of Dr. Davidian's contribution to the development work on spaceport emergence.

- Next Steps

- Complete interviews and population of incidents in the Spaceport Emergence Database
- Update the identified areas in the Spaceport Body of Knowledge
- Add new documents and references to the Body of Knowledge

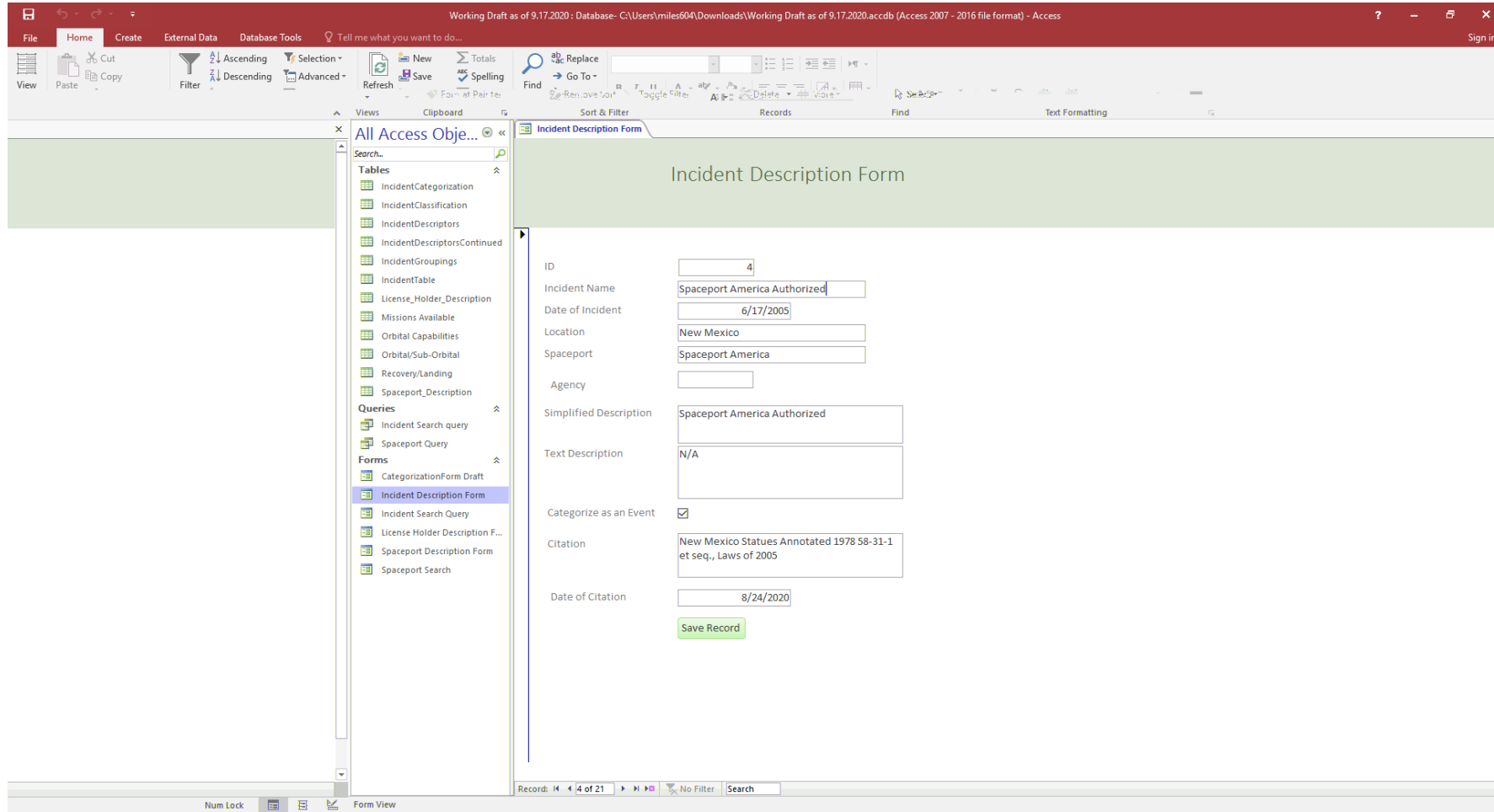
Attachments:

- Incident Characterization map



Attachments:

- Sample Incident Description Form



Working Draft as of 9/17/2020: Database- C:\Users\miles604\Downloads\Working Draft as of 9/17/2020.accdb (Access 2007 - 2016 file format) - Access

Incident Description Form

ID	4
Incident Name	Spaceport America Authorized
Date of Incident	6/17/2005
Location	New Mexico
Spaceport	Spaceport America
Agency	
Simplified Description	Spaceport America Authorized
Text Description	N/A
Categorize as an Event	<input checked="" type="checkbox"/>
Citation	New Mexico Statutes Annotated 1978 58-31-1 et seq., Laws of 2005
Date of Citation	8/24/2020

Save Record

Record: 4 of 21

Attachments:

- Sample Categorization Form



The screenshot shows a Microsoft Access application window titled "Working Draft as of 9.17.2020 - Database- C:\Users\miles604\Downloads\Working Draft as of 9.17.2020.accdb (Access 2007 - 2016 file format) - Access". The interface includes a ribbon with tabs for File, Home, Create, External Data, and Database Tools. The main area displays a form titled "Categorization Form" with the following fields and values:

Primary Category	
IncidentID	1
IncidentClassification	Technological Development Functions
IncidentDescriptor	Manufacturing & Construction
IncidentDescriptorContinued	N/A
IncidentGrouping	Proprietary Functions

Secondary Category	
SecondaryClassification	Financial Arrangements
SecondaryDescriptor	Industry-Wide Financial Stimuli
SecondaryDescriptorContinued	Private Sector Programs
SecondaryGrouping	Resources

Tertiary Category	
TertiaryCategory	Human Competence Pool
TertiaryDescriptor	Knowledge Sharing
TertiaryDescriptorContinued	Social Networking (General Space Industry)
TertiaryGrouping	Resources

At the bottom of the form, there is a "Save Record" button and a status bar showing "Record: 1 of 21" and "No Filter".

Attachments:

- Sample Incident Search Query Form



Working Draft as of 9.17.2020 : Database- C:\Users\miles604\Downloads\Working Draft as of 9.17.2020.accdb (Access 2007 - 2016 file format) - Access

Incident Search Query

Search By Incident Description

Enter Keyword to Search in Incident Title Field

Enter Start Year to Search in Incident Date Field

Enter End Year to Search For

Categorize

Simplified Description

Text Descriptions

Spaceport/Agency

Location

Search By Categorization and Descriptor

Search by Incident Classification

Search by Incident Descriptor

Search by Incident Descriptor Continued Incident Grouping

Secondary Classification

Secondary Descriptor

Secondary Descriptor Continue

Secondary Grouping

Tertiary Classification

Tertiary Descriptor

Tertiary Descriptor Continued

Tertiary Grouping

Search By Spaceport Qualities / Capabilities

Search by Spaceport Name

Search by License Holder

Search by Keywords in Spaceport Description

Search by Missions Available

Search by Orbital or Sub-Orbital Capabilities

Search by Recovery/Landing Capabilities

Search by Orbital Capabilities

Run Query

Records: 14 of 1 | No Filter | Search

Contact Information



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