Contoso Inc.

Tracker Analytics
Vision Document

Version 1.0

Document Revision History

Date	Version	Description	Author(s)
11-Mar-2020	0.1	Draft version for customer review.	Eric Marinho, Jessica Romio, Jill Navarro, Melissa Svoboda, Rand Shamas, Veeraiah Nannapaneni
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Vision

1. Introduction

1.1 Purpose

This document describes high-level user needs and features for the proposed Tracker Analytics product.

1.2 Product Overview

Contoso Inc. offers a Tracker Analytics product that assists in managing supply chain risk management (SCRM) threats and supplier tracking. It allows the user to visualize supplier locations, routes, and product manufacturing locations to identify possible supply chain risks. Tracker Analytics is a web-based application that can be accessed by any device with internet access. The application relies on Azure Active Directory Seamless Single Sign-On and multi-factor authentication to manage access for both the Contract Electronics Manufacturer (CEM), as well as the government end-user. Tracker Analytics interfaces with Google Maps for tracking locations, routes, suppliers, and shipments. It uses the Scout Severe Weather app to provide weather information based on the map location. The application also integrates with several other external applications for different quality control, logistics intelligence, satellite imagery, and HUMINT data on the suppliers, consumers, and intermediaries. Users can use the web application to see real-time risk-related information on their suppliers and correlate geolocations with physical addresses to ensure the proper shipment and delivery of products. The integrated map also displays dynamically optimized transportation routes that reduce the risks of deliveries due to natural hazards or possible malicious actions.

1.3 Definitions, Acronyms, and Abbreviations

- AAD – Azure Active Directory
- API – Application Programming Interface
- CEM – Contracts Electronics Manufacturer
- COTS – Commercial Off-The-Shelf
- HUMINT – Human Intelligence
- SCRM – Supply Chain Risk Management
- SSO – Single Sign-On
- MFA – Multi-Factor Authentication
- DBMS – Database Management System

1.4 References

- Microsoft Azure Active Directory Seamless Single Sign-On Documentation (https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sso)
- NIST SP 800-161: Supply Chain Risk Management Practices for Federal Information Systems and Organization (https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-161.pdf)
- Resilinc 2017 Annual Report (https://info.resilinc.com/eventwatch-2017-annual-report-0)

2. User Description

2.1 User/Market Demographics

SCRM attempts to manage risks along the supply chain by monitoring risk and reducing vulnerabilities. It applies tools to deal with risks and uncertainties along the supply chain. SCRM requires the efforts of multiple organizations and requires a holistic approach with all stakeholders involved. It can be challenging to manage the overall taxonomy of the system, as well as its suppliers and possible threats. This problem especially presents itself to government agencies which have supply chain requirements in place and follow documentation such as the NIST SP 800-161, Supply Chain Risk Management Practices for Federal Information Systems and Organizations. The Tracker Analytics application assists organizations in managing supply chain and cybersecurity risks and threats.

2.2 User Profiles

The primary users will be CEM employees who supply for critical government systems, as well as the government personnel who use the CEM's products.

2.3 User Environment

Organizations are currently facing financial, legal, and reputational damage because of the informational gaps within the supply chain process. The tech firm Resilinic reported that in 2017, supply chain incidents nearly doubled from the previous year to impact almost one in three S&P 500 companies. For SCRM to be effective, it must account for risks from a variety of different sources and adapt to changing information. The Tracker Analytics product is robust and takes in existing data from a variety of different sources and provides information to various users. It is capable to interface with existing information systems, such as manufacturing data, weather data, GPS data, tracking data, packaging data, and shipping and receiving data using RESTful API. It outputs the data onto a web application so that it can be accessed by any user on any device when needed. The application is hosted on the Microsoft Azure Government Cloud.

2.4 Key User Needs

The application must be accessible to users regardless of their physical location and always be available. Hence, the customer knows what their supply chain looks like at any given point in time. It must be user friendly and provide real-time metrics on risk factors. The user needs the system to integrate with the existing data feeds seamlessly as well as other information systems. The application must be available to the CEM and government users.

2.5 Alternatives and Competition

There are a few COTS products that provide tracker analytics for supply chain risk management such as, SCRMCentre and Vertaeon. Although these products provide some analytics features, Contoso's Tracker Analytics was designed specifically with the government customer in mind and therefore supports SSO with multi-factor authentication and uses the Azure Government Cloud while seamlessly integrating with other SCRM software components.

3. Product Overview

3.1 Product Perspective

This section provides a high-level architecture of Contoso's Tracker Analytics deployment. As the figure shows, the application deployment is simplified by leveraging serverless computing capabilities hosted on Microsoft Azure Government Cloud.

The solution consists of a stream process (Azure Functions and Event Hubs), which allows us to handle thousands of records all at once. It relies on a database (CosmosDB) that stores the state of records and assets, which are then queried by the client application (web-based dashboard) at regular intervals to provide the end-user experience.

Four external independent feeds provide data and functionality to meet the customer requirements. Feed updates are sent to the Azure subscription via an API Management component, which then hands off to Event Hubs. A stream process allows us to queue up thousands of records and automatically scale up and down, at an additional cost, depending on the volume of transactions. Event Hubs trigger an Azure Function call that does the processing and database inserts. There is also an Azure Storage Blob Account for long term storage and historical analysis. The Azure Function inserts the latest state of the records and assets into a CosmosDB database, which provides a snapshot of every tracked record and asset. CosmosDB is a globally distributed, multi-model database that natively supports multiple data models.

Lastly, a second Azure Function and API Management component pull out the current state of records and assets to the web-based dashboard. The figures below show end-users accessing the Tracker Analytics system via the web-based dashboard. Azure Active Directory provides single sign-on via SAML 2.0, OAuth, or OpenID Connect for government users as well as third-party vendors such as suppliers. Multi-factor authentication is enforced for all users, and access control is determined by role-based access control (RBAC) defined by the customer in AAD.
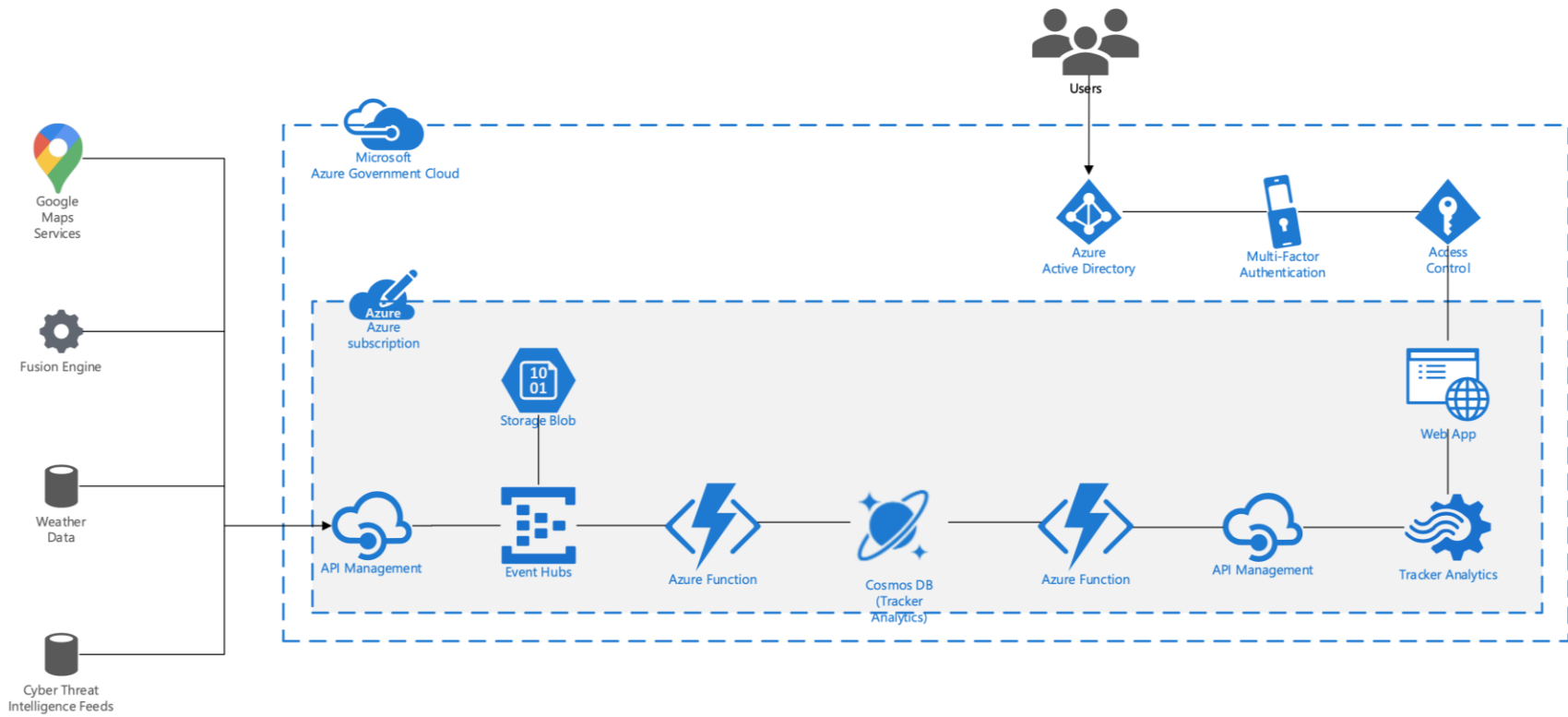
Figure 1: High-level architectural view of Tracker Analytics deployment in Azure
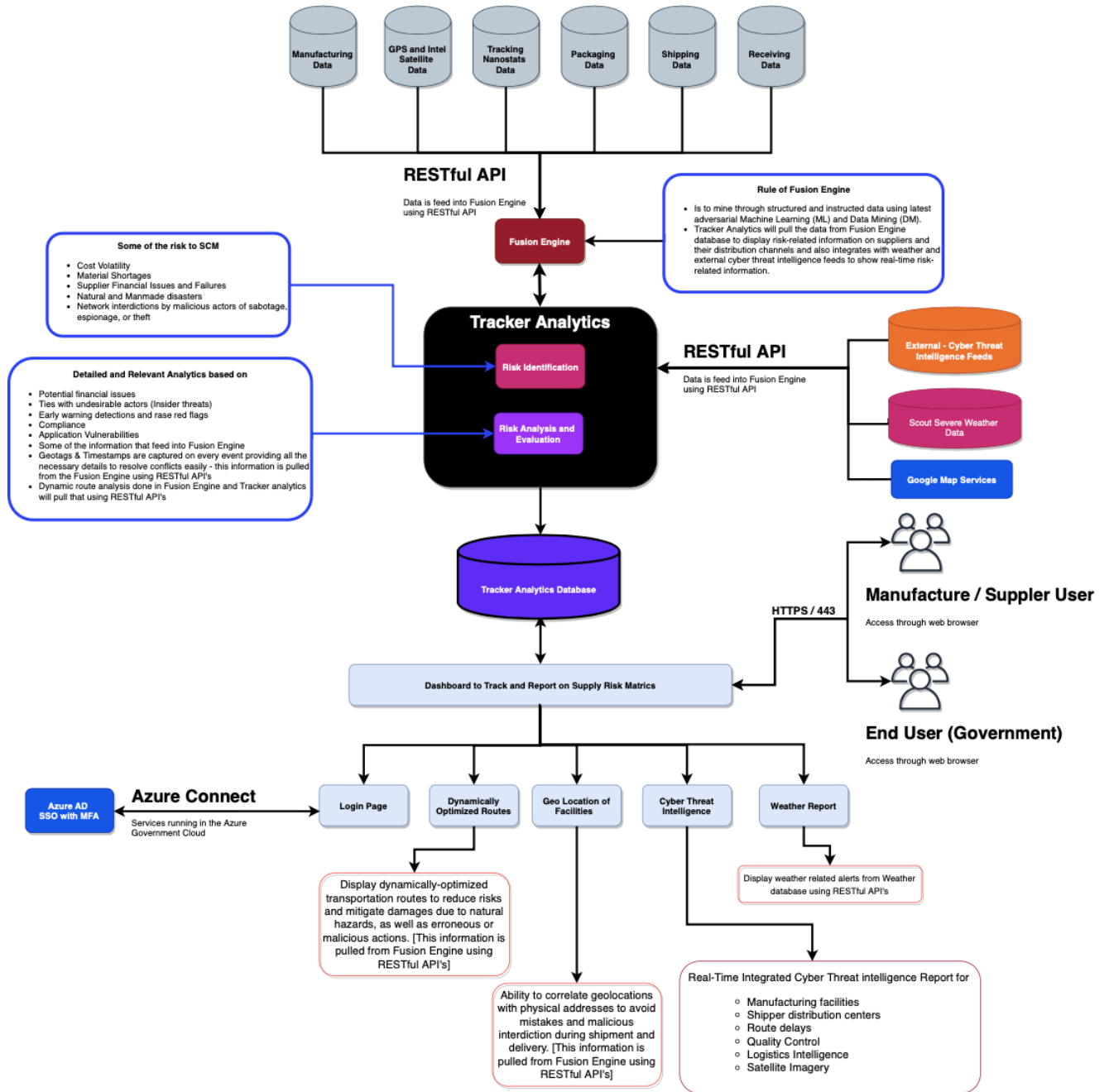
Figure 2: High-level architectural view of Tracker Analytics

3.2 Product Position Statement

Visualizing where suppliers are located and where products are manufactured are crucial to addressing supply chain risks. Tracker Analytics provides real-time insights for suppliers, consumers, and the means of transportation to allow a better understanding, management, and decision-making actions for logistics, risk, and continuity of operations.

3.3 Summary of Capabilities

- Web-based interactive Google Map for tracking locations, routes, suppliers, and shipments in a Single Pane of Glass (SPoG).
- View manufacturers, buyers, sellers, and intermediaries within a Community of Interest on an integrated map.
- Integration with external apps for Quality Control, logistics intelligence, satellite imagery, and HUMINT data for additional insights into suppliers, consumers, and intermediaries.
- Integration with Scout Severe Weather app.
- Ability to correlate geolocations with physical addresses to avoid mistakes and malicious interdiction during shipment and delivery.
- Display real-time risk-related information on suppliers and their distribution channels geographically.
- Display dynamically-optimized transportation routes to reduce risks and mitigate damages due to natural hazards, as well as erroneous or malicious actions.

3.4 Assumptions and Dependencies

It is assumed that governments wishing to deploy Tracker Analytics will have adequate internet bandwidth to prevent connectivity issues.

Users' devices must support modern web browsers to access the Tracker Analytics dashboard.

Azure Functions resources, CosmosDB service quotas, and API call throttling requests are limit by Microsoft Azure subscription and service limits, quotas, and constraints documented here https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/azure-subscription-service-limits

3.5 Cost and Pricing

It is estimated that the total development and deployment for Tracker Analytics will be $200,000. The solution will be deployed to Azure Government Cloud as required by public sector customers. The estimated cost to run Tracker Analytics in the cloud is around $63,000 annually in a 3-year contract with the cloud provider (Microsoft). This estimate is for 500 users, but it includes automatic scalability to meet the performance requirements of up to 1,000 users. The cost of Azure Government Cloud is broken down in section 7.3 of this document.

Additionally, customers have the option of paying a maintenance fee of 50,000 per year, which entitles them to full managed service of their cloud resources by Contoso Software Inc, including monitoring, online assistance, and incident response. Periodic patches and security updates will be made available to no additional cost.

4. Feature Attributes

The following attributes have been chosen for comparing product features in Section 0:
- *Cost:* The total cost of a feature's development for the first release, including maintenance to resolve issues.
- *Priority:* The relative desirability of a feature, based on the market opportunities and requirements described in this document (expressed as low, medium, or high).
- *Risk:* The relative risk that a feature cannot be developed within estimated cost or that the feature will not address market opportunities as expected (expressed as low, medium, or high).

5. Product Features

The following subsections outline the Tracker Analytics features that are key differentiators from existing manufacturing control products. Features are classified by attributes described in Section 4.

5.1 Feature: Ability to process each transaction in 2 to 5 seconds

Users shall wait no more than 5 seconds for a response to a given transaction request during registration peak times, such as querying a shipping.

- Cost: $36,000
- Priority: High
- Risk: Medium

5.2 Feature: Interface with DBMS

The software should be capable of interfacing with Azure Cosmos DB.

- Cost: $21,600
- Priority: High
- Risk: Low

5.3 Feature: Integration with cyber threat-related database for supply chain risk management

Ability to connect the external cyber threat-related databases to receive current risks related to supply chain.

- Cost: $13,200
- Priority: High
- Risk: Medium

5.4 Feature: Connectivity with Fusion Engine system

Track Analytics must interface with the Fusion Engine system using RESTful APIs to pull data regarding warehouse, inventory, shipping, GPS and satellite data, packaging details.

- Cost: $54,000
- Priority: High
- Risk: Low

5.5 Feature: Web-based interactive Google Maps for tracking locations, routes, suppliers, and shipments in a Single Pane of Glass (SPoG)

Track Analytics must utilize the Google Maps service to display customizable interactive maps, shipping routes, and supplier details such as names and addresses.

- Cost: $13,200
- Priority: High
- Risk: Low

5.6 Feature: Ability to share data with trading partner

The ability to create, store, and share audit trail data following industry standards will help to keep supply chain business compliant while also improving facility operations.

- Cost: $7,440
- Priority: Medium
- Risk: Medium

5.7 Feature: Ability to track goods and services in real-time

Ability to display real-time information on the suppliers, manufactures, buyers, sellers, and intermediaries within a community of interest on Google Maps.

- Cost: $31,200
- Priority: High
- Risk: Low

5.8 Feature: Ability to integrate Scout Severe Weather

Ability to pull weather data from Scout Severe Weather using RESTful APIs to provide real-time weather forecasts, and display affected shipping routes using Google Maps.

- Cost: $7,200
- Priority: Medium
- Risk: Low

5.9 Feature: Ability to provide a detailed audit trail for any given product

Supply chain technology such as warehouse management systems, RFID, and automated data collection collect data accurately and in real-time, creating a detailed audit trail. Passive data collection technologies are helpful not only because they reduce the labor required to process inventory, but because they can accurately collect a myriad of inventory information with little to no human interruption.

- Cost: $9,000
- Priority: High
- Risk: Low

5.10 Feature: Traceability of good to its destination

Ability to collect RFID information used on the parts, WIPs, finished products, and even shipping containers on their way to their destination.

- Cost: $7,200
- Priority: High
- Risk: Low

6. Key Use

Figure 3 depicts the key use case "6.1 Dashboard (SPoG)" involved in the Tracker Analytics database. The figure does not include installation and customization tasks, which will be a joint effort between the small team of trusted experts from the Government, non-government vendors, and Contoso, Inc. consultants.
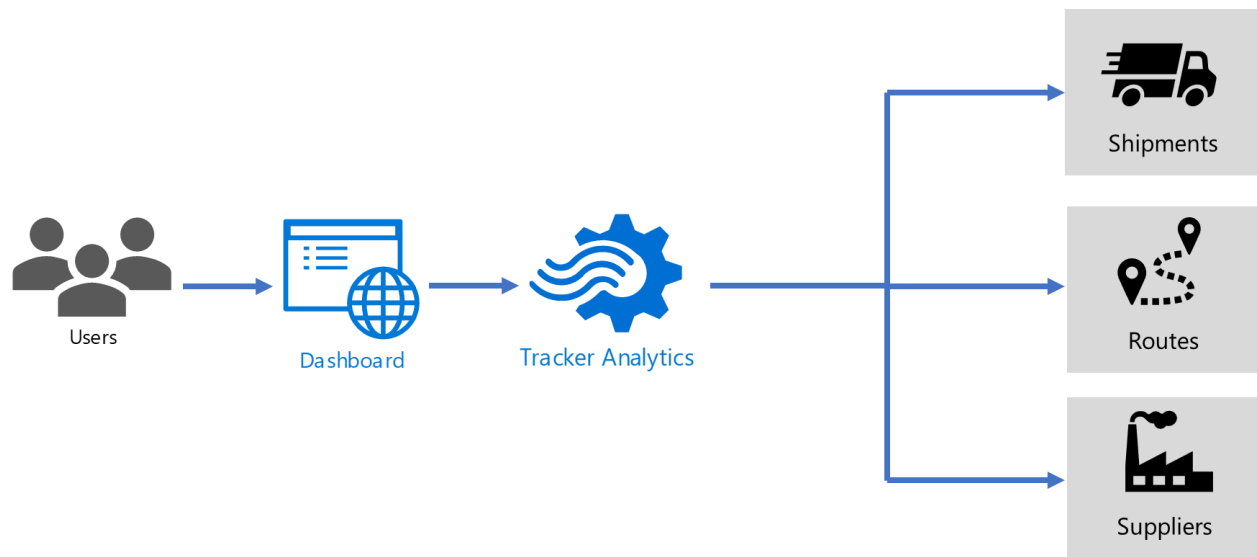

Figure 3: Key SCRM (Tracker Analytics) Use Case

6.1 Use Case: Dashboard [Single Pane of Glass (SPoG)] Access

Brief Description
Users can access an easy-to-use dashboard (Single Pane of Glass). It is a web-based application that includes an interactive map for tracking locations, routes, suppliers, and shipments.

References
- Development notes gathered from interviews on 03/20/20 with potential users at the Government.
- Tracker Analytics database reference manuals.
- Google Maps help.
- End-User Government Manual.
- End-User Non-Government Manual (Manufacturers and Suppliers).

Preconditions
The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

Normal Flow of Events
1. User brings up the dashboard.
2. User enters order number.
3. User enters the relevant information for the types of record sought (i.e., current shipments, routes, or suppliers)
4. User enters any other relevant search parameters and submits query.
5. Terminal/workstation sends query to the Tracker Analytics database.
6. Tracker Analytics database formats the results according to its logic and relays it back to the dashboard.
7. Terminal/Workstation displays dashboard results of selected query option.

Alternative Flows
Alternative Flow 1 – Error processing command
1. Tracker Analytics database returns an error after attempting to process query.
2. Workstation displays error and suggests correction of field value.
3. User resubmits corrected command and parameters.

Alternative Flow 2 – Unauthorized access
1. User lacks authorization to access data.
2. Tracker Analytics database generates an error for display by the terminal/workstation.
3. Access violation is logged and reported to IT for review and audit.

6.2 Use Case: Integrated map search

Brief Description
View manufacturers, buyers, sellers, and intermediaries within a Community of Interest on an integrated map.

References
- Development notes gathered from interviews on 03/20/20 with potential users at the Government.
- Google Maps help.
- Tracker Analytics database reference manuals.
- End-User Government Manual.

- End-User Non-Government Manual (Manufacturers and Suppliers).

Preconditions

The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

User has selected Google Map Services/Community of Interest option under the dashboard.

Normal Flow of Events

1. User queries shipment tracking number through the terminal/workstation.
2. Terminal/workstation connects to the Tracker Analytics database, and shipment data that meets search criteria is retrieved.
3. Tracking database formats the results and sends it to the terminal, which is displayed to the user.
4. User selects the desired Community of Interest zip code by using a drop-down list.
5. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that zip code.
6. Database responds with interactive map details that identify manufacturers, buyers, sellers, and intermediaries.

Alternative Flows

Alternative Flow 1 – Shipment unavailable

1. Server responds that no shipments are available in that zip code.
2. User confirms zip code and selects alternate city zip code within the same Community of Interest.

6.3 Use Case: View external system data (shipment)

Brief Description

Integration with external applications for quality control, logistics intelligence, satellite imagery, and HUMINT (Cyber Threat Intelligence) data for additional insights into suppliers, consumers, and intermediaries.

References

- Development notes gathered from interviews on 03/20/20 with potential users at the Government.
- GPS and Intel Satellite, Cyber Threat Intelligence database user manuals.
- Tracker Analytics database reference manuals.
- End-User Government Manual.
- End-User Non-Government Manual for Manufacturers and Suppliers.

Preconditions

The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, Cyber Threat Intelligence, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

The user has selected GPS and Intel Satellite option under the dashboard.

The user has selected the Cyber Threat Intelligence database under the dashboard.

Normal Flow of Events for GPS and Intel Satellite
1. User queries shipment tracking number through the terminal/workstation.
2. Terminal/workstation connects to the Tracker Analytics database, and shipment data that meets search criteria is retrieved.
3. Tracking database formats the results and sends it to the terminal, which is displayed to the user.
4. User selects the desired GPS and Intel Satellite option.
5. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that shipment.
6. Database responds with interactive map details that display GPS and Intel Satellite coordinates and map location.

Normal Flow of Events for Cyber Threat Intelligence
1. User queries shipment tracking number through the terminal/workstation.
2. Terminal/workstation connects to the Tracker Analytics database, and shipment data that meets search criteria is retrieved.
3. Tracking database formats the results and sends it to the terminal, which is displayed to the user
4. User selects Cyber Threat Intelligence option.
5. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that shipment.
6. Database responds with interactive map details that display GPS/ Intel Satellite coordinates on the map location and HUMINT (Cyber Threat Intelligence) information.

Alternative Flows
Alternative Flow 1 – Shipment unavailable
1. Server responds that no shipments are available.
2. User confirms data range of shipments.

6.4 Use Case: Integration with Scout Severe Weather

Brief Description
Integration with external application Scout Severe Weather data for additional severe weather insight impacting shipments.

References
- Development notes gathered from interviews on 03/20/20 with potential users at the Government
- Scout Sever Weather database user manuals.
- Tracker Analytics database reference manuals.
- End-User Government Manual.
- End-User Non-Government Manual (Manufacturers and Suppliers).

Preconditions
The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

User has selected Scout Severe Weather option under the Dashboard.

Normal Flow of Events
1. User queries shipment tracking number through the terminal/workstation.
2. Terminal/workstation connects to the Tracker Analytics database, and shipment data that meets search

criteria is retrieved.

3. Tracking database formats the results and sends it to the terminal, which is displayed to the user.
4. User selects the Scout Severe Weather option.
5. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that shipment.
6. Database responds with interactive map details that display severe weather temperatures and precipitation levels on the interactive map.

Alternative Flows

<u>Alternative Flow 1 – Shipment unavailable</u>

1. Server responds that no shipments are available.
2. User confirms the shipping tracking number.

6.5 Use Case: Ability to correlate geolocations with physical addresses to avoid mistakes and malicious interdiction during shipment and delivery

Brief Description

View integrated map and geolocation information for shipments.

References

- Development notes gathered from interviews on 03/20/20 with potential users at the Government.
- Google Maps help.
- Google Geolocation help.
- Tracker Analytics database reference manuals.
- End-User Government Manual.
- End-User Non-Government Manual (Manufacturers and Suppliers).

Preconditions

The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

User has selected Google Map Services option under the dashboard.

Normal Flow of Events

1. User queries shipment tracking number through the terminal/workstation
2. Terminal/workstation connects to the Tracker Analytics database, and shipment data that meet search criteria is retrieved.
3. Tracking database formats the results and sends it to the terminal, which is displayed to the user.
4. User selects the desired zip code by using a drop-down list.
5. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that zip code.
6. Database responds with interactive map details that identify geolocation information and physical address.

Alternative Flows

<u>Alternative Flow 1 – Shipment unavailable</u>

1. Server responds that no shipments are available.
2. User confirms shipping details.

6.6 Use Case: Display real-time risk-related information on suppliers and their distribution channels geographically

Brief Description
User is able to track all components of a product and status by geographic location.

References
- Development notes gathered from interviews on 03/20/20 with potential users at the Government.
- Google Maps help.
- Manufacturing database user manual.
- Tracker Analytics database reference manuals.
- End-User Government Manual.
- End-User Non-Government Manual (Manufacturers and Suppliers).

Preconditions
The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

User has selected Manufacturing Data option under the dashboard.

Normal Flow of Events
1. User queries product number in the Manufacturing database through the terminal/workstation.
2. Terminal/workstation connects to the Tracker Analytics database, and product number and associated shipment data on Google map that meet search criteria are retrieved.
3. Tracking database formats the results and sends it to the terminal, which is displayed to the user.
4. User selects Google Map Services option.
5. User selects Cyber Threat Intelligence database.
6. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that shipment.
7. Database responds with interactive map details that display products, shipping, and Google map location and HUMINT (Cyber Threat Intelligence) information.

Alternative Flows
Alternative Flow 1 – Shipment unavailable
1. Server responds that no products are available.
2. User confirms product number.

6.7 Use Case: Display dynamically-optimized transportation routes to reduce risks and mitigate damages due to natural hazards, as well as erroneous or malicious actions

Brief Description
User displays shipments and various transportation routes and associated hazards.

References
- Development notes gathered from interviews on 03/20/20 with potential users at the Government.
- Google Maps help.
- Google Geolocation help.
- Shipping database user manual.
- Weather database user manual.

- Severe Scout Weather database user manual.
- Cyber Threat Intelligence database user manual.
- Tracker Analytics database reference manuals.
- End-User Government Manual.
- End-User Non-Government Manual (Manufacturers and Suppliers).

Preconditions

The terminal is actively connected to the Tracker Analytics database through a RESTful API. It relies on the Fusion Engine to aggregate key data from manufacturing, weather, GPS/Intel Satellite, tracking, packaging, shipping, and receiving data. User is authenticated in the dashboard via SSO and MFA, and authorized to use the desired feature.

Normal Flow of Events

1. User queries shipment tracking number through the terminal/workstation.
2. Terminal/workstation connects to the Tracker Analytics database, and shipment data that meet search criteria is retrieved.
3. Tracking database formats the results and sends it to the terminal, which is displayed to the user.
4. User selects the Shipping database.
5. User selects the Weather database.
6. User selects Scout Severe Weather option.
7. User selects Cyber Threat Intelligence option.
8. Terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route, and an interactive map is available for that shipment.
9. Database responds with interactive map details that display severe weather temperatures and terminal/workstation invokes the verification module of the Tracker Analytics database, which ensures that shipment is in route and interactive map is available for that shipment.
10. Database responds with interactive map details that display products, shipping, and Google map location and HUMINT (Cyber Threat Intelligence) information.

Alternative Flows

Alternative Flow 1 – Shipment unavailable

1. Server responds that no shipments are available.
2. User confirms shipping details.

7. Other Product Requirements

7.1 Applicable Standards

Tracker Analytics can consume external data sources via RESTful APIs. Tracker Analytics allows for its data to be consumed by cognitive services, such as sets of machine learning algorithms, to help developers build intelligent applications. Additionally, Tracker Analytics allows for the export of records and query results to popular spreadsheet formats such as Excel.

Tracker Analytics uses open standards protocols for authentication and authorization, such as SAML, OAuth, and OpenID Connect to facilitate single sign-on for users and application-to-application integration.

7.2 System Requirements

The following are the anticipated installation requirements for the solution:

- Tracker Analytics
  - Infrastructure [Microsoft Azure Government Cloud]
    - Azure Function

- - - Storage Blob
    - Event Hubs
    - Azure Active Directory
    - Multi-Factor Authentication

- Tracker Analytics User Interface
  - While there are no browser-specific features used by the UI, the following browsers are supported for other products offered by Contoso, and they will likely be supported for Tracker Analytics: Chrome, Edge, Firefox, Opera, and Safari.

- DBMS
  - Azure Cosmos DB
  - Each Cosmos container must have a minimum throughput of 400 request units (RUs).

7.3 Licensing

Microsoft Azure Active Directory, which includes Multi-Factor authentication is licensed PUPM (per user per month). It is anticipated that Tracker Analytics will be licensed on an enterprise level, not on a per user basis. The customer will be required to purchase a Microsoft Azure subscription. The Customer based on the workload consumed per month.

Microsoft Azure Estimate

Service type	Custom name	Region	Description	Estimated Cost
Azure Functions		West US	Premium tier, EP1: 1 Cores(s), 3.5 GB RAM, 250 GB Storage, 2 Pre-warmed instances, 4 Additional scaled out units	$931.63
Azure Cosmos DB			Single Region Write (Single-Master); 3 year reserved capacity; 20,000 RU/sec; 500 GB Storage	$1,001.00
Storage Accounts		East US	Block Blob Storage, General Purpose V2, LRS Redundancy, Archive Access Tier, 1 x 1 PB, 1 x 100 TB Capacity - 3 year reserved, 100,000 Write operations, 100,000 List and Create Container Operations, 100,000 Read operations, 100,000 Archive High Priority Read, 1 Other operations. 1,000 GB Data Retrieval, 1,000 GB Archive High Priority Retrieval, 1,000 GB Data Write	$1,264.36
Azure Active Directory		West US	Free tier, Enterprise directory objects, 730 User forest hours, 730 Resource forest hours.	$438.00
API Management		West US	Standard tier, 2 units(s), 730 Hours	$1,373.42
App Service		West US	Basic Tier; 2 B2 (2 Core(s), 3.5 GB RAM, 10 GB Storage) x 730 Hours; Windows OS	$219.00
Support			Support	$0.00
			Licensing Program	Microsoft Online Services Agreement
			Monthly Total	$5,227.41
			Annual Total	$62,728.91

7.4 Performance Requirements

Tracker Analytics will need to be capable of processing simultaneous user requests during the business hours and must be able to process requests and render the response in 5 seconds or less to each transaction item.

8. Documentation Requirements

8.1 Online Help

Online user guides and help assistance will be provided for the Tracker Analytics Search, Add, Drop, and Payment Processing modules. Microsoft offers Azure online documentation for cloud resources and components.

8.2 Installation and Configuration Guides

The following hardcopy manuals will be provided:
- An installation reference manual.
- Module customization guide.
- End-user guide.