TRAFFIC

the wildlife trade monitoring network

Tender Document

Open Access Online Portal

and

TRAFFIC-only Portal

Tender Reference Number: 386.1.8_2019_1

Contents

Introductory Notes

Overview

TRAFFIC, the wildlife trade monitoring network, is a leading non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC's mission is to ensure that trade in wild plants and animals is not a threat to the conservation of nature. TRAFFIC International is the head office for TRAFFIC, based in the UK and located at the David Attenborough building, Cambridge.

Introduction

This Tender Document has been created to provide an overview of the requirements, goals and standards that TRAFFIC has with regard to the design of an Open Access Online Portal (to be known externally as the Wildlife Trade Tracker) and a TRAFFIC-only Portal, which are defined as follows:

- **Open Access Online Portal (Phases 1 to 3)**: a public-use online portal for viewing open source wildlife trade data currently held in TRAFFIC's Trade database.

- **TRAFFIC-only Portal (Phase 4):** an online portal that allows users to enter data and undertake detailed analysis of data currently held within TRAFFIC's trade database, as a replacement for the current 'IntelliShare' browser-based add-on for iBase.

These two portals should be viewed as two separate areas of development and as such TRAFFIC will accept either two separate offers in writing relating to each portal, or one offer in writing relating to one portal.

Assumptions

The sections in this document that cover the deployment and implementation of the portals should be seen as a guide. Flexibility is permitted to allow for different development processes. However, suppliers are encouraged to seek clarifications before proceeding based on an assumption. All assumptions made must be fully documented within the tender proposal.

Key elements to include

- Company profile or CV including details of skills and expertise in relation to services required, including VAT registration number, if applicable

- Demonstration of an understanding of the services being requested and the resources you have available

- A detailed tender proposal including your proposed solutions to the services required

- Cost breakdown analysis split between the separate phases of development

- Any assumptions you have made

- Customer references or reviews of your services

- Equality and Environmental Sustainability policies

Tender Process

Tender Timetable

TRAFFIC reserves the right to amend these dates if required.

Task	Description	Timeline
Tender Release	Tender made available online	24th January 2019
Submission of Tenders	Full responses must be received by close of business	13th February 2019
Evaluation of Responses	TRAFFIC will evaluate supplier proposals and if necessary seek clarification from suppliers	14th – 25th February 2019
Supplier Confirmation	TRAFFIC will inform selected supplier that they have been successful	26th – 28th February 2019
Transition Period	The selected supplier will commence detailed planning of their solution prior to the contract commencement	1st – 31st March 2019 (TBC)
Contract Commencement	Full development will begin	1st April 2019 (TBC)
Deadline for Phase 1	See Process View for further details	1st June 2019 (TBC)
Deadline for Phase 2	See Process View for further details	1st August 2019 (TBC)
Deadline for Phase 3	See Process View for further details	1st September 2019 (TBC)
Deadline for Phase 4	See Process View for further details	TBC

Submission of Tender

The deadline for submissions of offers is **13th February 2019.** An electronic copy of the submission must be emailed to antony.bagott@traffic.org, and acknowledgement of receipt will be sent back to the sender.

The detail specified in each supplier response may be specified in any future contract, therefore suppliers should ensure their responses are authorised at the appropriate level that would enable them, should their offer be successful, to become the subject of a binding contract.

Contact Details

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Telephone: 01223 331983

Conditions

Any company or individual responding to this tender request (hereinafter referred to as the Supplier) acknowledges that a response to this tender does not commit TRAFFIC to any course of action resulting from its receipt and that the following conditions are to be observed:

- TRAFFIC may, at its discretion, reject any tender and is not bound to give any reason for doing so.

- TRAFFIC may select a Supplier based upon its own unique set of criteria.

- TRAFFIC is not bound to disclose details of such criteria and may at any time alter the criteria to reflect the changing needs of the business.

- TRAFFIC may terminate the tender process at any time.

- TRAFFIC reserves the right to amend any part of this tender request if required.

Nothing contained in this tender request or any other communication made between TRAFFIC and the Supplier shall constitute an agreement, contract or representation between TRAFFIC and the Supplier or any other party. Receipt of this tender request by the Supplier does not imply the existence of a contract or commitment by or with TRAFFIC for any purpose and Suppliers must note that this tender request may not result in the award of any business. It does not purport to contain all of the information that a Supplier may require. While TRAFFIC has taken all reasonable steps to ensure that, as at the date of this document, the facts that are contained in this tender request are true and accurate in all material respects, TRAFFIC does not make any representation or warranty as to the accuracy or completeness or otherwise of this tender, or the reasonableness of any assumptions on which this document may be based.

It is the responsibility of the Supplier to obtain for itself at its own expense all additional information necessary for the preparation of its response to this tender. Suppliers are responsible for all costs, liabilities and expenses that may be incurred in the preparation of its response to this tender and TRAFFIC will not be held liable for any costs incurred by the Supplier regardless of the outcome or whether a contract is awarded.

Document Overview

This document will map the business requirements to the solution requirements. Although the document will contain technical detail, it is designed to be read by stakeholders, users and technical staff.

Purpose

To detail the requirements for an open-access online portal, which will give access to TRAFFIC's open source wildlife trade data.

Glossary

A full document **Glossary** can be found at the end of this document. All referenced items will be shown in blue, bold and underlined: **An example.**

Background

TRAFFIC wish to create an online browsable/searchable repository of their open source wildlife seizure data. This data will be made available over the internet to TRAFFIC staff, other NGO's, journalists and other interested parties. The portal should give a compelling, visually attractive and easy way to look at the data.

TRAFFIC use **iBase** to record information about wildlife that is being traded or transported illegally and has subsequently been seized by enforcement organisations such as the police or customs. The data is from open sources and much of the seizure data is taken from online media articles or press releases.

IntelliShare is currently used internally to give wider access to data held within iBase. It connects to an iBase database and allows creation of and access to data through a browser. **IntelliShare** does meet some of TRAFFIC's requirements. However: It's no longer supported, it isn't secure enough to work over an open network (the internet) and it doesn't offer any dashboard functionality or mapping interfaces.

References

The following resources were referenced as part of the requirements gathering exercise.

https://www.childabuseroyalcommission.gov.au/document-library
a document store online which has been used as an example.

http://s-branch.co.uk/analysing-and-understanding-text/
An example of what can be done with text analytics

http://www-01.ibm.com/support/docview.wss?uid=swg27042054&aid=1
Further information about IntelliShare

https://trade.cites.org/
CITES Trade Database (official govt trade records of international trade in some species)

http://dashboards.cites.org/global?id=Mammals
CITES Dashboard (visualises CITES trade data)

https://trademapper.aptivate.org/
TradeMapper

http://www.iucnredlist.org/search
IUCN Red List (species search)

https://eia-international.org/illegal-trade-seizures-rhino-horn/
EIA map of rhino seizures

https://en.wikipedia.org/wiki/Levenshtein_distance
Details about Levenshtein Distance matching algorithm

Other important information

Diagrams shown in this document are for rough descriptive purposes only and are not necessarily representative of the final required product.

Solution Requirements and Goals

This section will state the business goals and the solution goals. As well as any constraints based on the proposed architecture.

The goals have been split into two sets of requirements:

1. The requirement for a public use online portal, for viewing data currently held in TRAFFIC's Trade database.

2. The requirement for an internal portal, to allow TRAFFIC users to enter data and undertake detailed analysis of data currently held within TRAFFIC's trade database.

These goals have been split to allow each requirement to be explored and defined in full without confusion or crossover.

Open Access Online Portal (Wildlife Trade Tracker)

Business goals

The portal will be an online browsable/searchable repository of TRAFFIC's open source wildlife seizure data which is held in iBase, and a document repository for other files such as court case documents. It will be used by TRAFFIC users, other NGO's, law enforcement, journalists and other interested members of the public.

All users (including TRAFFIC employees) will request access to the portal and will need to be manually approved by an administrator. TRAFFIC administrators will be able to revoke user access.

As part of the user access request process, a 'Terms and Conditions' page will appear. As part of this, all users will need to accept or electronically sign the current **Information Sharing Agreement**.
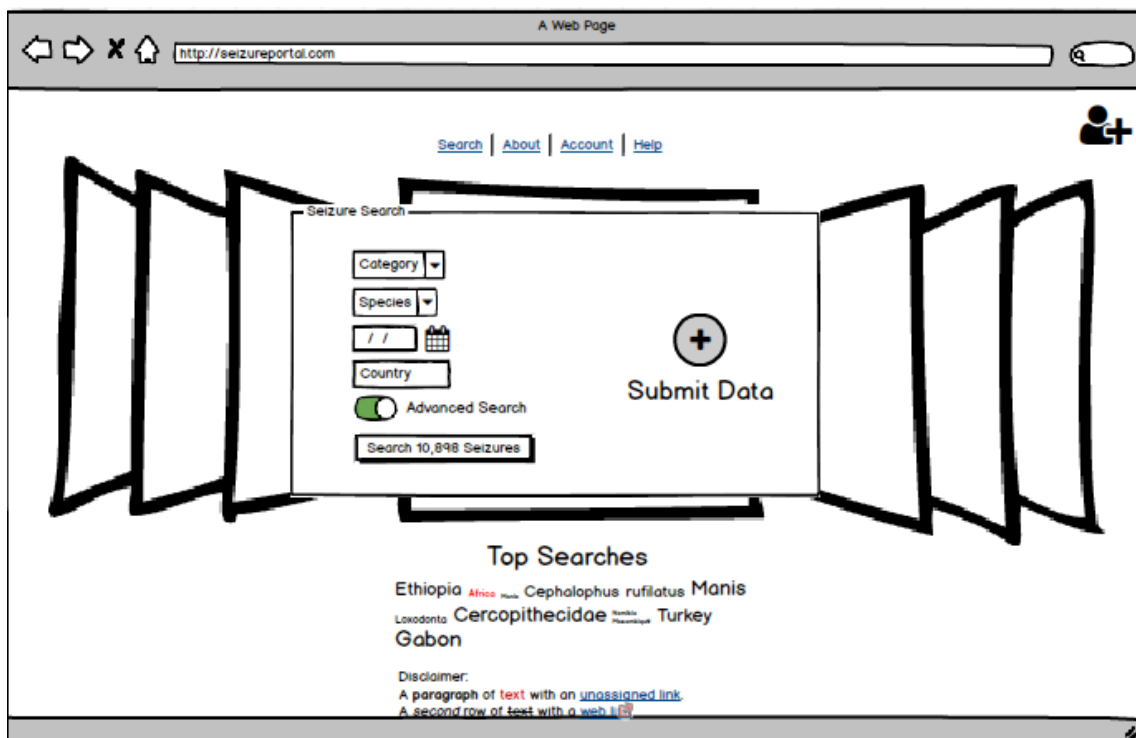

Figure 1: Search Screen

Once approved, a user will login to the portal and will be able to search and analyse the data. Searching will include a simple search and an advanced search. A simple search will include: species, country, date and category. The Species search must be dynamic, as a species could be referenced in several ways. An example of a dynamic species search can be found **here**. An advanced search will allow more fields to be selected as filters. The search and results will be based around the seizure and the key linked **entities**: Location and Species.

Results for seizure data will be displayed three ways: a list, a map and a dashboard.

The list will display the key fields for an Incident. The dashboard will give a summary of the information on the screen but also act as a filter of the results. The results of any search will be exportable to a csv. When a record is selected the details of that seizure will be displayed. Any additional **entity** information for the incident (related items such as locations or species) will be shown at the bottom as tabs.

A map will allow data with coordinates to be marked on the map. Labels of items will be visible on the map when the mouse pointer is rolled over.

The portal will also allow for a searchable document repository.
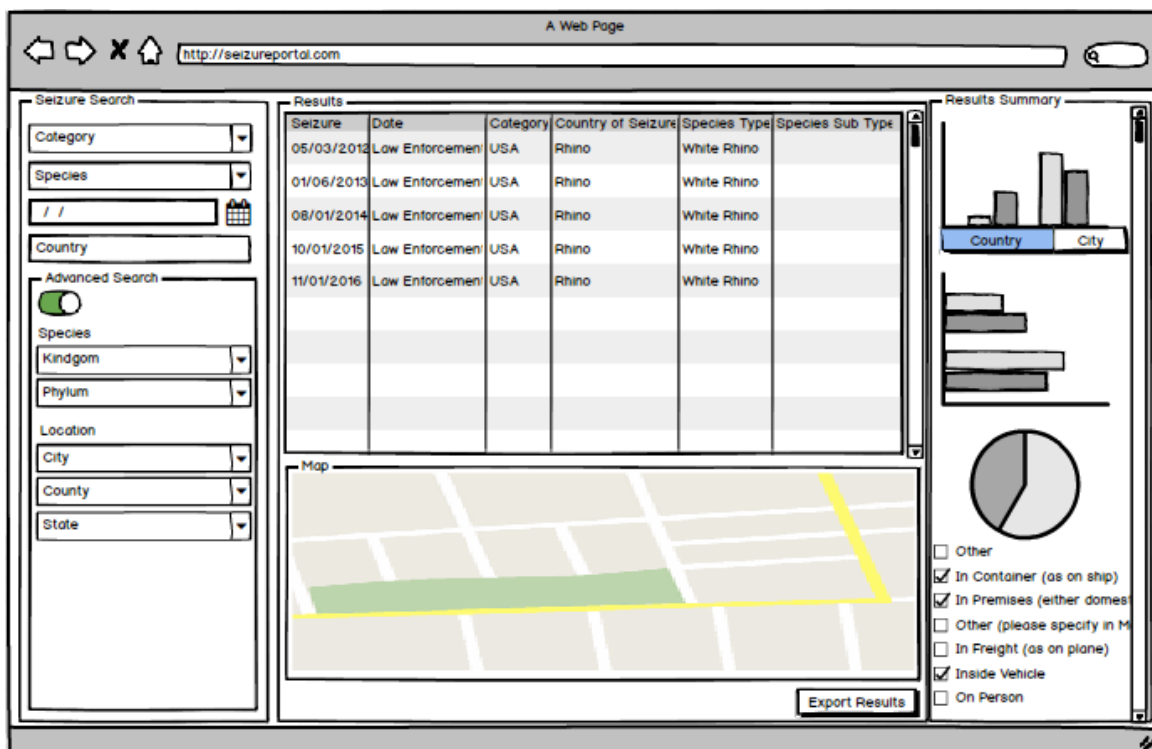
Figure 2: Results

Users will be able to submit data to TRAFFIC. This will be in two forms:

- A spreadsheet. The portal will give a downloadable template that people can use for submission, but no constraints will be made on what is uploaded. TRAFFIC administrators will then review, transform and load the data into iBase at TRAFFIC offices.

- Media, such as documents or pictures. The portal will give the ability to upload media and then link them to an incident record (when media is uploaded, the interface will be able to

force the user to link it to a specific incident). Therefore the metadata will arrive (e.g. image.jpg is linked to Incident 123) alongside the uploaded media. This will not link anything in the database but send the link information to TRAFFIC administrators for them to review.

Solution Goals

- The request for access must be audited, so that administrators can approve, view and if necessary revoke access.

- A 'Terms and Conditions' page must be accepted by the user before approval, and a full Privacy Statement (with references to GDPR) will be available once a user is logged in.

- A new user will receive an email with a link where they can reset their password for first login. It should be possible for the user to reset their password at any time.

- A full user list, with contact details, will be made available to administrators at TRAFFIC.

- Searchable fields should be limited to < 10 for the main search and < 30 for advanced search.

- The search and results list will be a 'simplified' view of the data. Incidents, Species and Locations are stored in separate **entities** (or tables) in **iBase**, but the results will be viewed as one record of information.

- When a records details are displayed, other **entities** will be available to see through tabs.

- Fields available on the details tab will be controlled through iBase or by a separate administration control panel within the portal.

- The solution should provide smart matching on records on import. This would be an add-in to iBase that would match non-exact matches with a score. An example: may be 'Istanbul Ataturk Airport' and 'Istanbul Ataturke Airport', which would match with a high percentage. This would run alongside iBase's existing duplication checks.

- A configurable disclaimer section must be available on search screen, export screen, import screen and results screen.

Constraints/Assumptions

- Passwords will match TRAFFIC's existing password policy. It is assumed that this forms passwords <10 characters with a mixture of upper case, lower case, numerical and special characters.

- Data for the portal is pulled from the iBase database held within TRAFFIC offices. Although users will be able to submit data to TRAFFIC, no data will be automatically fed into iBase without review.

- Uploaded data will be less than 200MB

- Data on the portal will be limited to records with a **Handling Code** of 1.

- One incident can include multiple locations. Therefore, to avoid overcrowding, on the search results page the location displayed should be the seizure location (i.e. the 'Country' field in the Incident entity) – the linked locations will be searchable but they will not necessarily be viewed in the results list. The user will enter the incident to see all linked locations.

TRAFFIC-only portal (IntelliShare Replacement)

Business Goals

This browser-based application will be a replacement for the current **IntelliShare** product. It will provide a fuller picture of the data held within **iBase.** Rather than a simplified portal for the public, this will provide a platform from which to enter data directly and perhaps also produce analyses of the data.

Users access to the application, and also to specific records, will be controlled by a security group in iBase, in the same way that **IntelliShare** is currently managed.

Users will be able to add new records to iBase through the portal. This will be done through a datasheet (like IntelliShare).

Searching will compromise of a 'google-like' search over all **entities**, **links** and documents, and a more detailed advanced search where users can choose an entity type to search on. Users will also be able to create simple queries, and/or run queries that have been saved in iBase.

Results will be displayed as a list, but could also be displayed as a map, a network visualisation and a dashboard. The results list could include multiple types of entities, which can always be filtered down by a dashboard. This dashboard filter should include a timeline filter for temporal analysis.

The portal should allow analysis of the data using network visualisations. This requirement is currently met by IntelliShare for internal analysis. This will mean the following functionality is met:

- To allow an **Entity** to be placed onto a **Visualisation**

- To allow entities to be expanded showing any **links** they have to other entities.

- To give a filter option, to only expand on certain **entity** type(s)

- To give a filter option, to filter out existing items on a **visualisation**
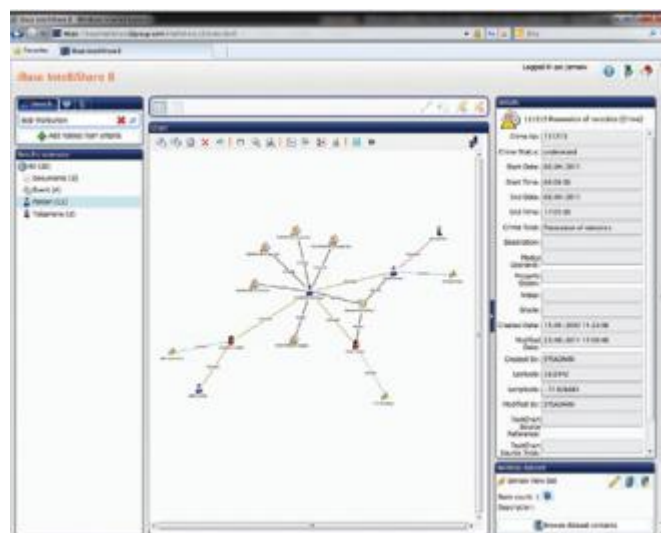
- To run layout **force directed**

Figure 3: Example of visualisation from IntelliShare

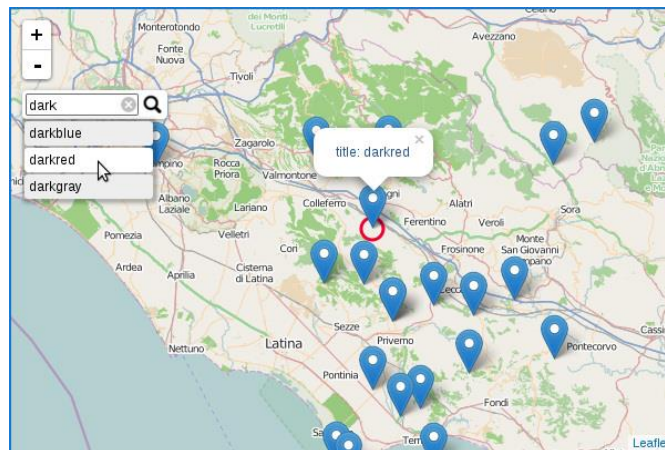The portal could also allow data with coordinates to be placed on a map.

Figure 4: Example of data being mapped

- A map will be able to show Geotagged information already on a visualisation

- Labels of items will be visible on the map when a mouse is rolled over.

Solution goals

- **Entities**, **links** and fields that are available on the portal will be managed from iBase.

- 'Google' Searching will be based on a 'full-text search' style search, this will need the ability to be administered.

- Advanced searching will give the ability to search over any field available.

- TRAFFIC users' access to the application and to specific records will be managed by iBase (through Security Manager, Data Access Control, Security Classification Codes, etc.)

- Records will update automatically alongside iBase, in as close to real-time as possible.

Constraints/Assumptions

- The functionality of the TRAFFIC-only portal could be obtained by building something bespoke or bringing in a third-party product.

- The portal will provide a non-simplified version of the data, meaning users will need to have a concept of what an **entity** and **link** are.

Quality of Service Requirements

Performance

Speed of the system is important to TRAFFIC. The following will ensure that the portal is as performant as possible:

Result Caching

By caching results of searches, tasks like csv exports will be quicker to run. Currently there are around 13,000 incidents in the database, so we don't envisage performance being too bad.

Database Choice

A faster online database like MariaDB can be used to speed up searches.

Notifications

Tasks such as downloads can be dealt with using notifications. When an export is requested the csv will be generated in the background. This means a user can continue using the system until the csv is ready. They will then be notified and can download the file.

Queue worker and process watcher

For heavy tasks such as downloading, a process queue with multiple works can be spun up. This has been proven to improve the performance of tasks on web applications.

Size Limit

A size limit will be imposed on downloads and uploads.

Number of Users

Need to consider if the number of potential users will pose an issue. We estimate that there will only be a small number of core users so we don't envisage performance being greatly affected.

Content Utility Service

Scripting and HTML files will be copied around using a content utility service. This will mean browsers aren't hitting the TRAFFIC online server each time to retrieve the site files.

Security

The site will use SSL. SSL (Secure Sockets Layer) is a standard security protocol for establishing encrypted links between a web server and a browser in an online communication. The usage of SSL technology ensures that all data transmitted between the web server and browser remains encrypted.

There are free SSL certification methods or paid for organisation verified SSL methods. Both are secure and would work with the portal.

Passwords will use a one-way hash system, such as SHA256

An SSL connection will be made between the TRAFFIC site and Server-Side for all transfers.

Scalability

The current database size is 10GB. It is envisaged that the database will grow faster once the portal is in place.

An estimate for guidance is shown below:

Current: 10GB

3-year estimate: 40GB

4-year estimate: 50GB

5-year estimate: 60GB

Alerting will be provided on the server when space is low.

A load balancer can be applied to the server to help keep access smooth. With the current numbers it is advised that this only be implemented as necessary.

Compatibility

The application should aim to run on any browser from IE 11 onwards. The minimum browser requirement will need to be decided by TRAFFIC and may change depending on the technology used.

The site will be built using HTML 5 and any uploads or downloads will be in csv format.

Use-Case View

This description will describe the set of scenarios and/or use cases that represent the significant functionality.

Open Access Online Portal Use-Case Diagram
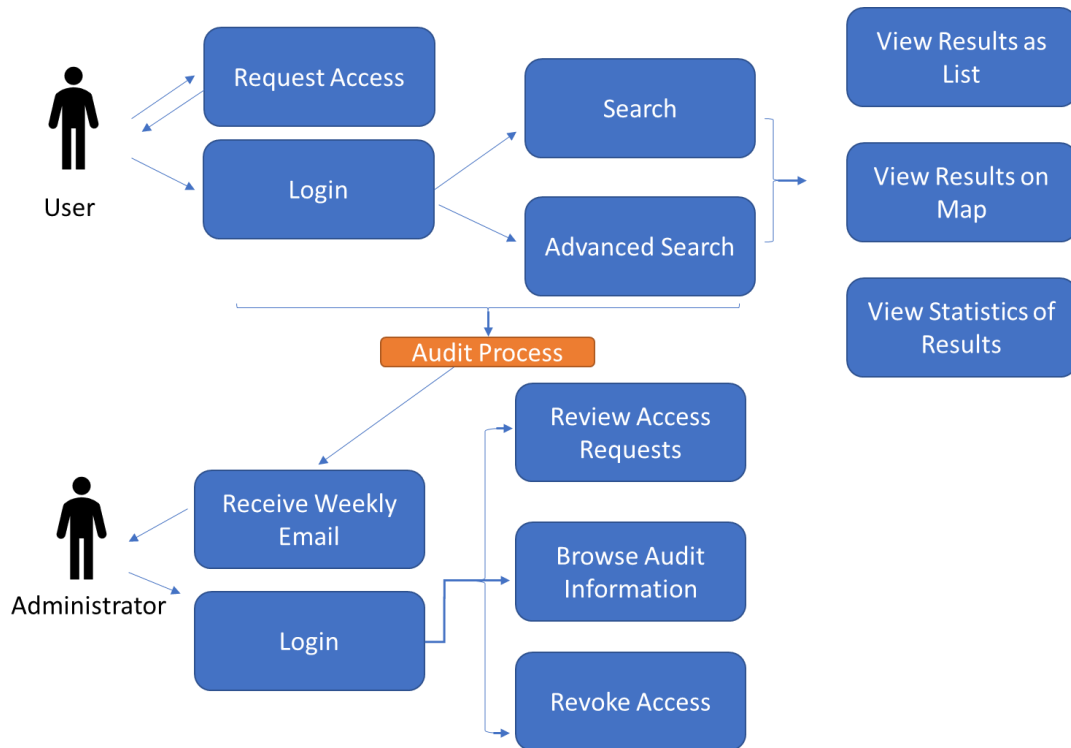
This diagram supports the use cases described below.

Figure 5: Open Access Online Portal Use Case

New User Login

A user will navigate to the portal page and be asked for user credentials or to register. When a new user requests access their request will be automatically allowed. An email will be sent to them with a link where they can set their password an continue onto the portal. Once into the portal their access is recorded in the audit.

User Search, Simple

A user will log in and run a simple search on the basic fields, for example: species, date, category or country. An example: Rhino seizures in Nambia. The user will be able to choose how specific they are about the species and choose the country. The performed search will be recorded in the audit. The user will then be able to view the results as a list, on a map and see the statistics.

User Search, Advanced.

A user will log in and run an advanced search based on a mixture of fields. For example: Rhino horn seizures that include more than 3 pieces in one seizure. The performed search will be recorded in the audit. The user will then be able to view the results as a list, on a map and see the statistics.

Revoking User Access

Each week an email will be sent to the administrators with a link to stats of system. How many users, how many searches were made, top search terms etc. This will also include a list of new users. An administrator will have the option to revoke any access.

TRAFFIC-only portal
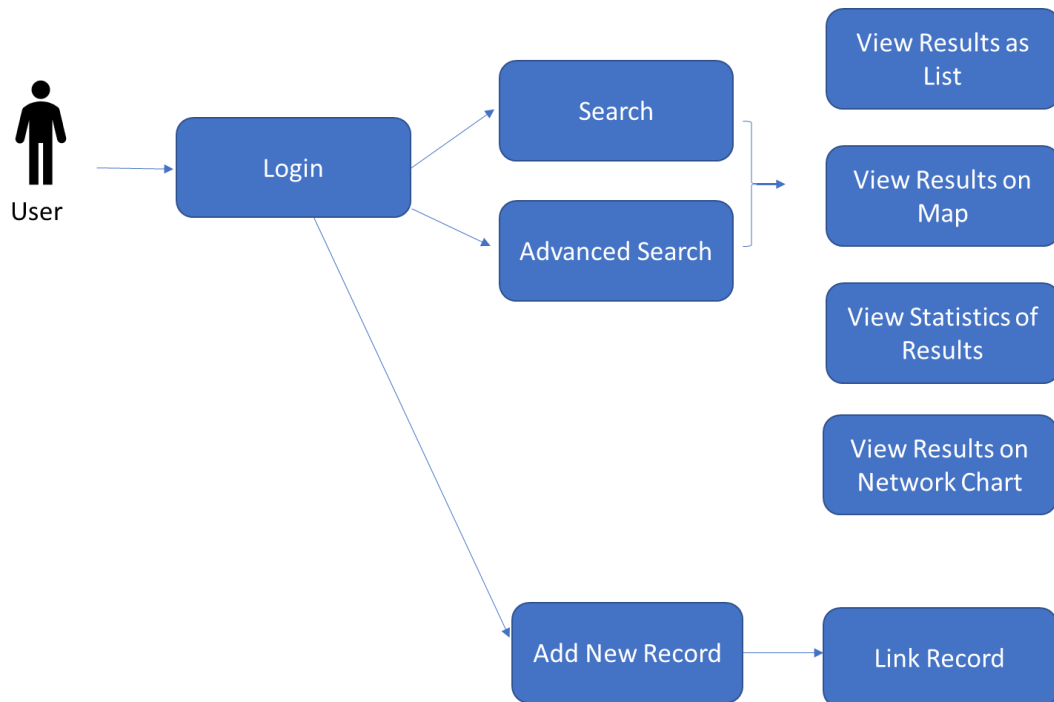
This diagram supports the use cases described below.

Figure 6: TRAFFIC-only Portal

New User Login

A user will navigate to the portal page and be asked for user credentials. A user will enter their iBase username. If they have not logged in before they will be asked to set their password. This password can be changed at any time when they are logged in. The password management will be done by the administrators through an admin page.

User Search, Simple

A user will log in and run a simple 'google like' search. An example: White Rhino. The results will return giving any entity type that matches. The user will then be able to analyse the results on a map, on a network visualisation and see the statistics.

User Search, Advanced

A user will log in and run an advanced search based on a mixture of fields. For example: Rhino horn seizures that include more than 3 pieces in one seizure. The user will then be able to view the results as a list, on a map, on a network visualisation and see the statistics.

Adding Records

A user will log in and choose to add a new record. This could be any entity type within the database. The record could then be linked either by a datasheet (like IntelliShare) or by drawing links on a chart; the preferred method will need to be decided by TRAFFIC. The new record will then be synced in real time with the iBase database.

Process View

We envisage that the deployment will be delivered in phases.

Phase 1

This will be a soft release, giving simplified read only access to the portal. The results will be displayed in a list and the details will be displayed in a datasheet style form. Users will be able to export results to a csv. **This phase should take around 2 months to complete.**

Task	Description	Mandatory
iBase review and amendments	Review around the way media, documents and locations are stored in multiple ways. With the idea to address inconsistencies before the data is delivered to the portal	No, but recommended
Custom views written for portal view of data	Custom views written around the Incident and appropriately linked entities	Yes
Set up of hosted site for portal	Set up of web portal server, domain and administration	Yes
Set up of server-side database	Set up of MySQL database	Yes
Automated transfer of data from iBase to server-side database	Secure transfer of data from TRAFFIC offices to server-side database	Yes
Build and Design of Site	This will be based on a visual design provided by TRAFFIC	Yes
Build of search functionality	Including consultation around species hierarchy	Yes
Build of Results list	Including consultation around appropriate fields. Results will be available for both seizure data and whole documents.	Yes
Build of datasheet details view	Including consultation around appropriate fields	Yes
Build of csv export	Including consultation around appropriate fields	Yes
UAT	User acceptance testing	Yes

Phase 2

This will be a public release. In addition to Phase 1, this phase will include dashboards and map functionality as well as audit information. The login process for the general public will be implemented, including administration revoke functionality. **This phase should take around 2 months to complete.**

Task	Description	Mandatory
Build of Dashboards	Including consultation around appropriate fields. The ability to filter and understanding of how users will interact with the dashboard	Yes
Build of Mapping interface	Integration with mapping plug-in such as leaflet. The ability to map and label items from search	Yes
Build of Audit Database	Set up of MySQL database	Yes
Build of Triggers to populate Audit	Set up of triggers to populate audit database	Yes
Build of new user process	Including, email, new user form, change of password and trigger to add to audit trail	Yes
Build of revoke functionality	Including trigger to add to audit trail	Yes
UAT	User acceptance testing	Yes

Phase 3

As Phase 2, this will give users the ability to upload documents to the portal for TRAFFIC employees to review and add to iBase. Data could be spreadsheets or media such as documents. This phase will also include any de-duplication assistance within iBase. **This phase should take around 1 month to complete.**

Task	Description	Mandatory
Upload functionality	Form to upload spreadsheets, documents or media. Media uploads will need to have the ability to be linked to an incident.	Yes
Automated transfer of uploaded media to TRAFFIC site	Ability to retrieve uploaded media, documents, spreadsheets and linked information	Yes
Notification system to Administrators	Including email and trigger to add to audit trail	Yes
De-duplication around entities	De-duplication method post import in iBase, based on Levenshtein distance	No, but recommended
De-duplication around media	De-duplication based on hash value of media, so if the same document is uploaded twice it will flag as a match.	No, but recommended
UAT	User acceptance testing	Yes

Phase 4

This phase will give full IntelliShare functionality to a separate portal based on the same data, giving access to all entity types, bringing chart visualisations to the functionality and giving users the ability to add new records directly into the database from the portal. **This timeframe for this phase can be discussed.**

Task	Description	Mandatory
Standard views written	Views that extract all entities and links based on iBase security group	Yes
Views written to extract users	Views that extract all user names for access to portal	No
Set up of hosted site for portal	Set up of web portal server, domain and administration	Yes
Automated transfer of data from iBase to server-side database	Secure transfer of data from TRAFFIC offices to server-side database	Yes
Build of search functionality	Including consultation around how users will search	Yes
Build of Results list	Including consultation around appropriate fields	Yes
Build of datasheet details view	Including consultation around appropriate fields	Yes
Implementation of Mapping	Implementation of mapping using as much of already built code from phase 2 as possible	Yes
Implementation of Dashboards	Implementation of dashboards using as much of already built code from phase 2 as possible	Yes
Build of Network Visualisation	Build of network visualisation piece including layouts and manual movement or entities	Yes
Build of add/append forms	Including views onto database that will auto-build form and populate temporary database	Yes
Sync of data with iBase	Sync of data from server-side database to TRAFFIC offices	Yes
UAT	User acceptance testing	Yes

Deployment View

The deployment view is a is the description of the deployment process that will be adopted for deployment of the final solution. This is for guidance only and could change depending on what phases TRAFFIC choose to implement and what security restrictions are in place.

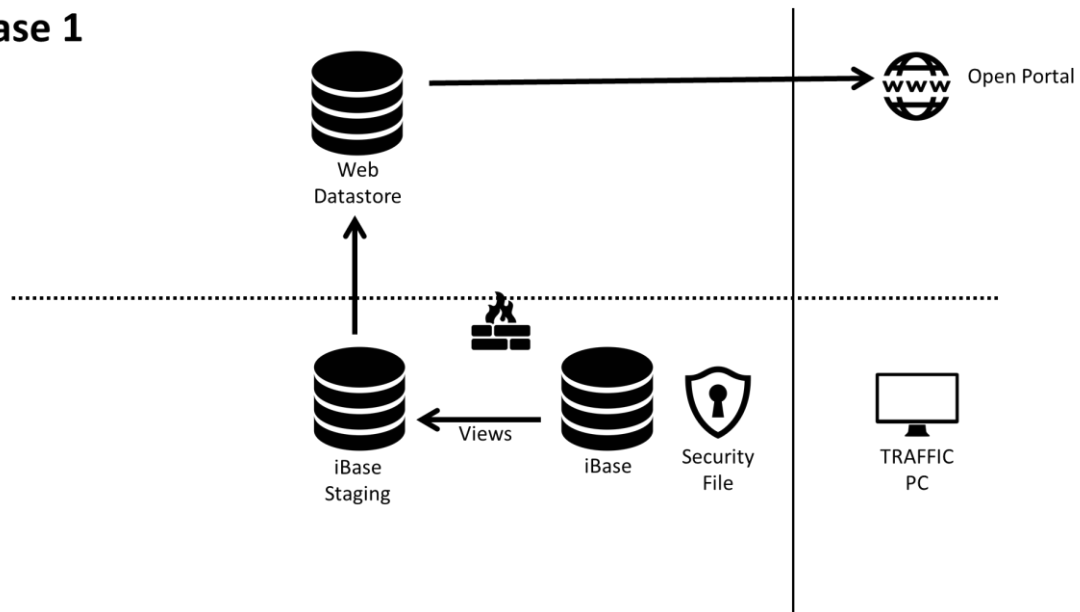## Open Access Online Portal deployment view

Figure 7: Phase 1 Deployment View

Data from iBase will be extracted using custom views written in a separate database called iBase Staging. This prevents any custom code touching the iBase database and therefore retains the warrantee. The data from these views will be extracted and transferred to the external server by SFTP.

The data will then populate the web datastore (e.g. a MYSQL database) which will then feed the portal. The portal will be read only at this stage.
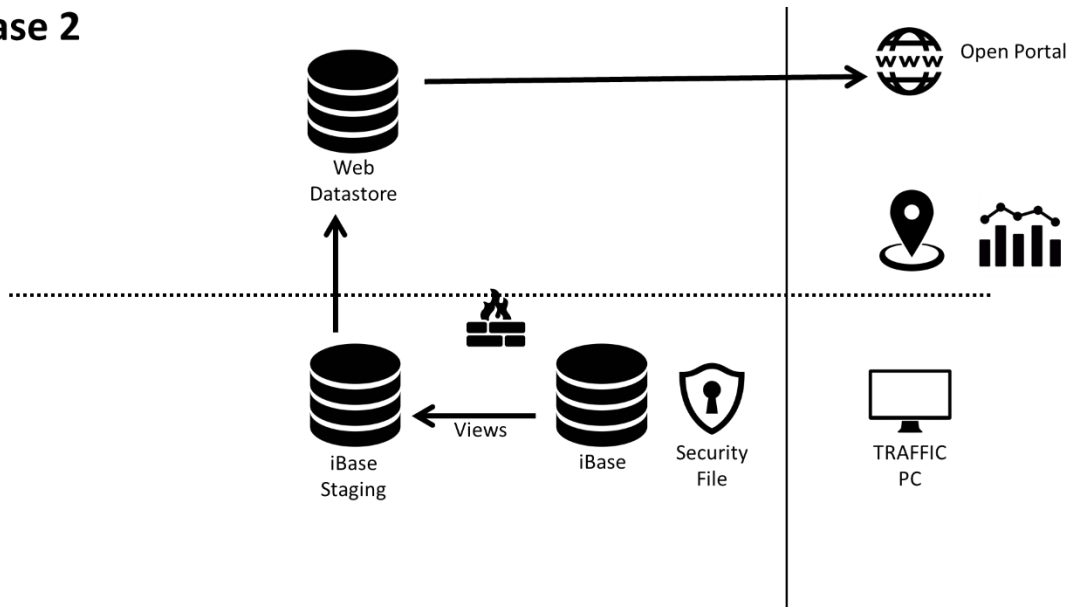
Phase 2

Figure 8: Phase 2 Deployment View

Phase 2 deployment view remains mainly the same except for the addition of maps and dashboards which will require server-side processing. Mapping can be done through a 3rd party plug-in such as leaflet.

Audit functionality will be built into the web datastore, to include triggers when users are established, login, search and export.
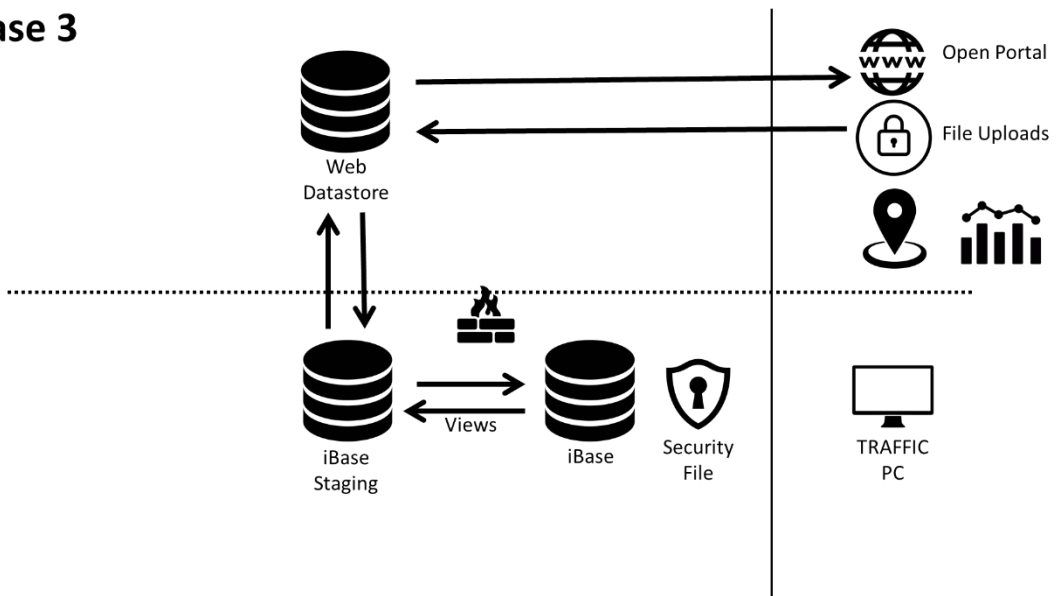
Phase 3

Figure 9: Phase 3 Deployment View

Phase 3 gives the ability for users to submit file uploads. Files will be temporarily stored on the server-side web store before being transferred to iBase Staging by SFTP. A form alongside the submitted data will be filled in online which will give TRAFFIC staff more information about the upload.

TRAFFIC-only portal deployment view
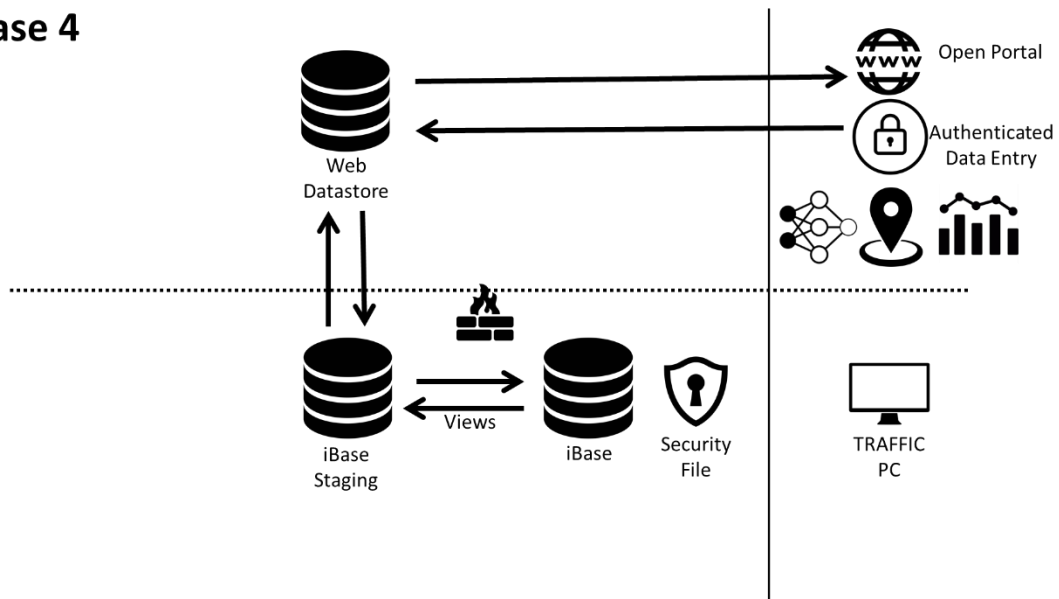
Phase 4

Figure 10: Phase 4 Deployment View

Although Phase 4 doesn't look drastically different from the other phases, this is one of the biggest phases. Phase 1 – 3 are building a custom web portal. Phase 4 is building a web-based application.

Data from iBase will be extracted using standard views written in a separate database called iBase Staging. This prevents any custom code touching the iBase database and therefore retains the warrantee. These views will 'learn' new fields as they are added to the system.

The data from these views will be extracted and transferred to the external server by SFTP. The data will then populate the web datastore (e.g. a MYSQL database) which will then feed the portal.

Phase 4 gives the ability for TRAFFIC users to create new entities records and link them. The form that is used will be auto-generated based on the fields available to portal. The records created will be stored in temporary tables and transferred to TRAFFIC offices by SFTP. Once received the imports into iBase will run automatically, giving an autonomous system.

NB: Phase 4 may be seen as a separate area of development. Therefore the development of this phase does not necessarily need to take place *after* Phases 1 to 3 – indeed, they may happen simultaneously.

Implementation View

This section includes the methods and options for implementation of technology and the developed solution.

Open Access Online Portal Implementation View

iBase is based on Microsoft SQL Server and therefore all TRAFFIC side processing and automation should remain on the same technology.

Transfer protocols should be as secure as possible – e.g. SFTP or SSL.

TRAFFIC-only Portal Implementation view

The same applies as above. The TRAFFIC-only portal is a full application which means looking at a pre-built web application could be an option.

Document Glossary

1. iBase (i2 iBase)

A relational database designed to store intelligence. This is an IBM product which TRAFFIC use internally. iBase stores its data as **Entities** and **Links**, which allows it to be analysed using a visualisation tool called **Analyst's Notebook**.

2. Analyst's Notebook (i2 Analyst's Notebook)

A client-based application that visualises data. Analyst's Notebook or ANB can be used as a stand-alone tool or can connect do data held within iBase.

3. ANB

Abbreviation of Analyst's Notebook,

4. IntelliShare (i2 IntelliShare)

A browser-based add-on to the iBase product. It gives lightweight functionality of both **iBase** and **ANB**. Designed to give access to a wider range of users across a closed network. This is an IBM product which is no longer supported.

5. Information Sharing Agreement

An agreement aimed at establishing a working relationship between TRAFFIC and a partner for the purposes of sharing data, setting out the conditions and data protection terms that will apply (particularly with reference to GDPR), and ensuring that any existing requirements and laws are adhered to.

6. Entity

An object which can be linked to other objects. For example: An Incident (a wildlife seizure) may be linked to a Location (an address).

7. Link

A logical link which links Intelligence Entities together. For example: a 'Location Role' link holds information about what role a Location played in an Incident.

8. Handling Code

A field in iBase with a dropdown that determines to what extent the information for that **Entity** or **Link** can be shared. The codes are graded from 1 to 5 ranging from open dissemination to the public at Handling Code 1, to internal TRAFFIC use only at Handling Code 5.

9. Visualisation

A visual network of data made up of **Entities** and **Links.** This gives a clear picture of what is linked to an individual **entity**. It will also show interconnecting networks, for example: what seizures have

10. Force Directed

Force-directed is used to draw visualisations in an aesthetically-pleasing way. Their purpose is to position the entities of a graph so that all the links are of more or less equal length and there are as few crossing edges as possible

11. iBase Designer

The administrative application to i2 iBase.