



ENHANCING THE PROCUREMENT
OF DIGITAL NAUTICAL CHARTS TO
FACILITATE STREAMLINED LITTORAL
ANALYSIS VIA A CUSTOMIZED
WEB-BASED PROGRAM.

DNC Web Application

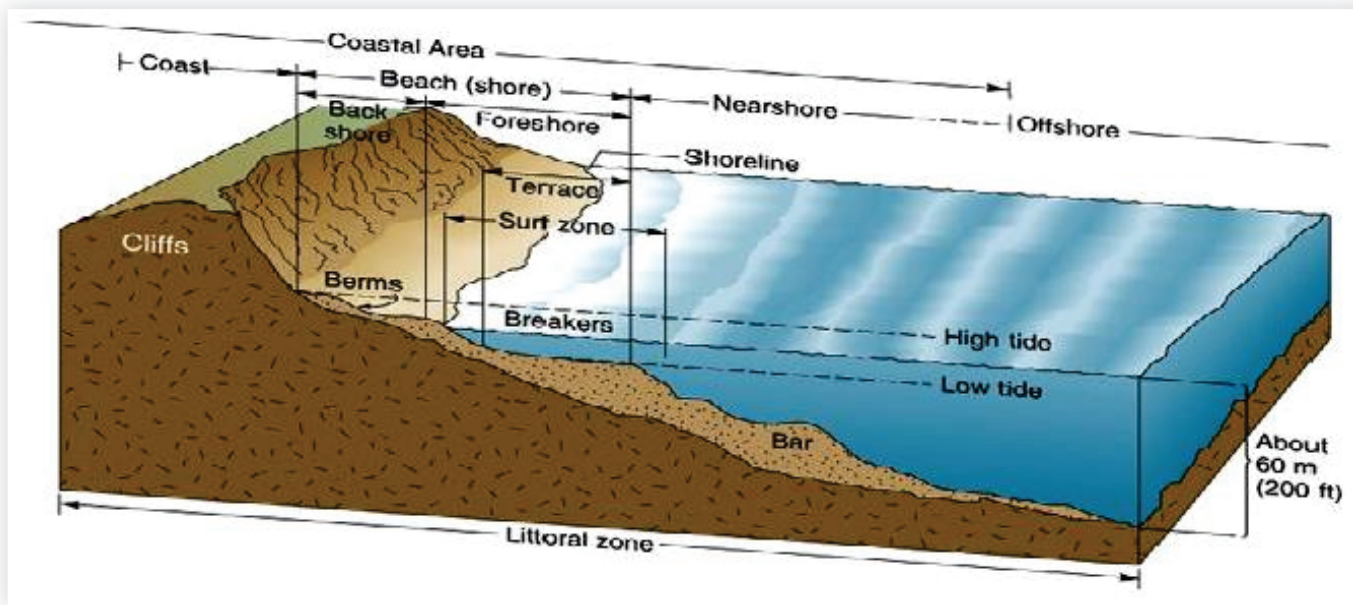


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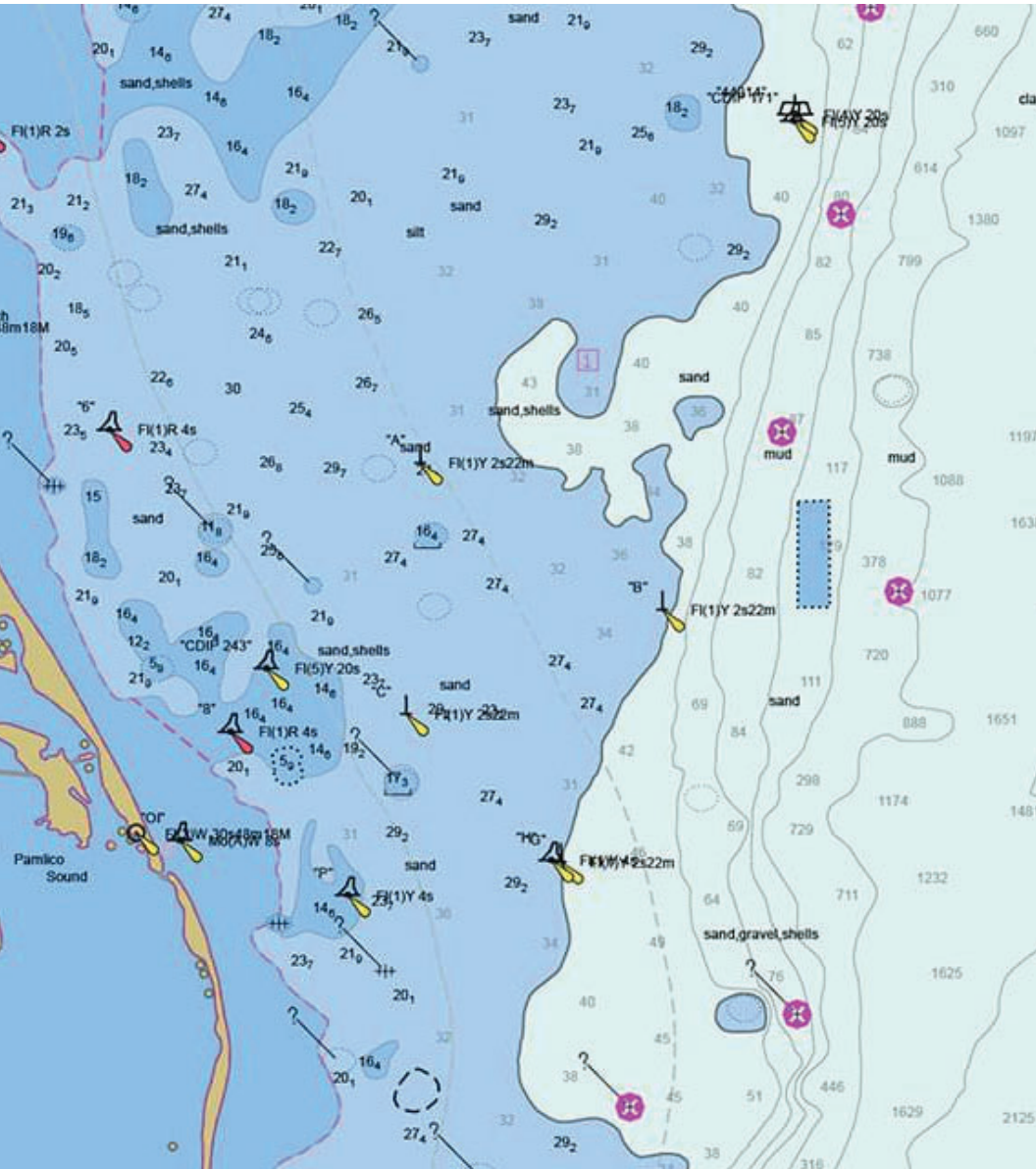
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KEY TERMS

- Littoral Analysis
- Nautical Data
- Digital Nautical Charts
- Maritime Safety Information or MSI
- National Geospatial-Intelligence Agency or NGA
- Customized Web-Based Program

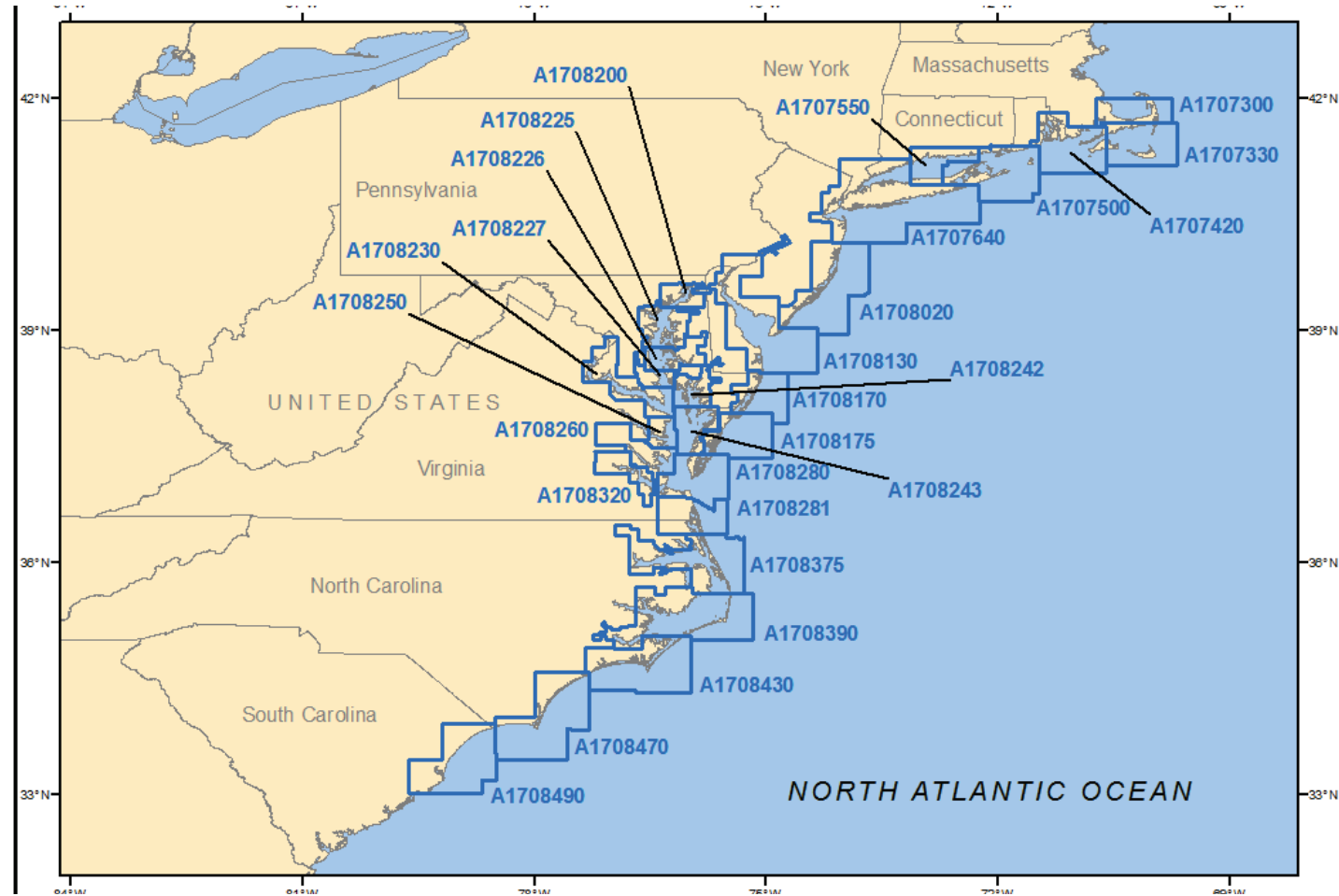


LITTORAL ANALYSIS



NAUTICAL DATA

DIGITAL NAUTICAL CHART



The defense industry version of digital nautical charts used for navigation, which include information such as water depths, navigational aids, and shoreline features.

DNC VS ENC

DNC is a digital chart product created by the National Geospatial-Intelligence Agency (NGA) that provides vector-based nautical chart data for use in military applications.

ENC, on the other hand, is a digital chart product created by the International Hydrographic Organization (IHO) that provides vector-based nautical chart data for use in commercial and recreational navigation. .

ENC data includes information such as depth contours, navigational hazards, and navigational aids, and is designed to be used in Electronic Chart Display and Information Systems (ECDIS) onboard ships and other vessels.

DNC is primarily intended for use by the military and defense communities, while ENC is intended for use by the commercial and recreational maritime communities.

WHY USE DNC?

Availability: NGA DNC data is readily available and accessible to the Marines, as it is managed and maintained by the National Geospatial-Intelligence Agency (NGA), which is a primary source of geospatial intelligence for the US Department of Defense. NOAA ENC data, on the other hand, is managed and maintained by the National Oceanic and Atmospheric Administration (NOAA), which primarily serves the civilian and commercial maritime communities.

Compatibility: NGA DNC data is designed to meet the specific needs and requirements of the military and defense communities, including support for military symbology, intelligence overlays, and other features that are not available in NOAA ENC data.

Security: NGA DNC data is classified and encrypted to ensure the security and integrity of military operations and intelligence. NOAA ENC data, on the other hand, is not classified and may be accessible to civilian and commercial entities.

Reliability: NGA DNC data is regularly updated and maintained to ensure the accuracy and reliability of information for military operations and intelligence. NOAA ENC data is also updated regularly, but may not always meet the specific needs and requirements of the military and defense communities.



MARITIME SAFETY INFORMATION (MSI)

NATIONAL GEOSPATIAL-
INTELLIGENCE AGENCY



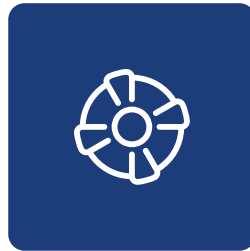
DIGITAL NAUTICAL CHART OVERVIEW

National Geospatial-Intelligence Agency Maritime Safety Information Website



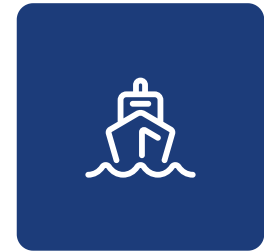
The Problem

Time spent on data acquisition instead of data analysis



The Solution—Until Now!

Streamlining the data acquisition process



Your Solution

New web application providing improved ease-of-use to users

CURRENT DATA ACQUISITION PROCESS

The screenshot displays the Maritime Safety Information website. At the top, a navigation bar includes links for HOME, NOTICE TO MARINERS, PUBLICATIONS, NAVIGATIONAL WARNINGS, PIRACY, DRILL RIGS, PRODUCT CATALOG, MISC. PRODUCTS, and NAUTICAL CALCULATORS. The main content area features a central 'MARITIME SAFETY OFFICE' section with the heading 'Our Mission' and the text: 'Provide global maritime geospatial intelligence in support of national security objectives, including safety of navigation, international obligations, and joint military operations.' To the left, a 'Customer Outreach' sidebar contains buttons for 'WHAT'S NEW...', 'SUBMIT A REPORT...', and 'DID YOU KNOW...'. To the right, a 'Subscription Services' sidebar contains buttons for 'NOTICE TO MARINERS', 'NAVIGATION WARNINGS', and 'PUBLICATION UPDATES'. Below the main content, a footer bar includes links for 'Browser Support', 'Legal Disclaimer & Security Policy', and 'Commercial Use Warning'. The bottom-most footer contains links for 'Contact Information', 'FAQ', 'Developers', 'FOIA / Privacy Policy', 'Mission Partners', and 'Digital Nautical Charts (DNC)'. A small text at the very bottom reads 'Dynamic content classified up to UNCLASSIFIED'.

- Register
- Log in
- Navigate to the DNC page

CURRENT DATA ACQUISITION PROCESS

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

[DNC® Home](#) [Maritime](#) [Contact DNC®](#) [FAQ](#)

Region

Digital Nautical Chart (DNC®)

The Digital Nautical Chart (DNC) is produced by the National Geospatial-Intelligence Agency (NGA) and is a vector-based digital product containing maritime significant features essential for safe marine navigation. DNC, for areas in which the US is the prime charting authority, is unclassified. All other areas are limited distribution.

DNC provides global marine navigation information between 84 North latitude and 81 South latitude and supports a variety of Geographic Information System applications.

DNC® Regions (Click on a Name for DNC® downloadable files)

Name	Graphic Image	Edition Number	Updated to Notice to Mariners	Last Update
	DNC Graphic Image			
DNCDX001 - South Atlantic Ocean	DNCX001	34	12/23	2023-04-07
DNCDX002 - East Africa	DNCX002	20	12/23	2023-04-07
DNCDX003 - Indian Ocean	DNCX003	29	13/23	2023-04-12
DNCDX004 - Western Australia	DNCX004	25	14/23	2023-04-19

- Pick the region using the following DNC Graphic Image

CURRENT DATA ACQUISITION PROCESS

The screenshot displays the NGA DNC website interface. At the top, the NGA logo and name are visible. The main navigation bar includes links for [DNC® Home](#), [Maritime](#), [Contact DNC®](#), and [FAQ](#). A dropdown menu for 'Region' is set to 'DNCX017 - Eastern United States - to NtM 11/23'. The central content area features a map of the Eastern United States with a blue rectangular selection box. The map is labeled with coordinates: 33.00 N, 42.00 N, 51.00 N, and 99.00 W. To the left of the map, the text 'Current on Edition' is displayed above the number '54'. A red-bordered box contains the text 'Approved For Federal Vessels Only'. Below this, a button labeled 'Chart to Library Reference' is visible. To the right of the map, there are several informational boxes: 'Disclaimers' with links for 'Certified Libraries', 'DNC® Advisory', 'Warning for Civil Vessels', and 'DNCX017 VDU Disclaimer'; 'Edition Patches' with links for 'Windows (30.9 MB)' and 'About', and a link for 'Tips for downloading'; and 'Library Catalog' with a 'Coverage Group' section containing links for 'Approach', 'General', 'Harbor', 'Coastal', 'Browse', and 'All', and a 'Totals' section showing 'Library:76' and 'Charts:312'. The footer of the page includes the NGA logo and links for 'Print Page', 'Contact NGA', 'FOIA', and 'Privacy Act'.

- Pick the Scale
- Download the Zipped Data
- Unzip the data
- Convert the data
- Import the data
- Format the data

IDEAL FUTURE STEPS IN WEB APP

1

Open the web page

2

Paste in your coordinates

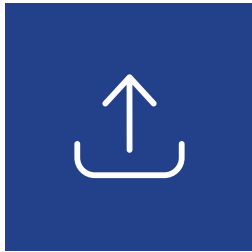
3

Download the file(s) that appear in the pop-up

4

Import the file into arcmap or arcpro

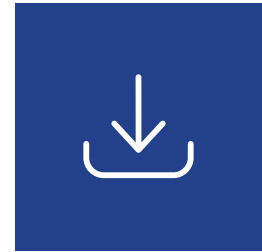
METHODOLOGY OVERVIEW



Webscrape DNC



Store data in Google Sheets using
Sheets API



Tie data to coordinates using ESRI
API

ANTICIPATED RESULTS

Several potential benefits to having a web app display coordinate searchable DNC data



Point #1

Increased efficiency: By automating the data collection process, we can save significant amounts of time and reduce the potential for human error. This will allow military analysis teams to focus on analysis instead of data collection.



Point #2

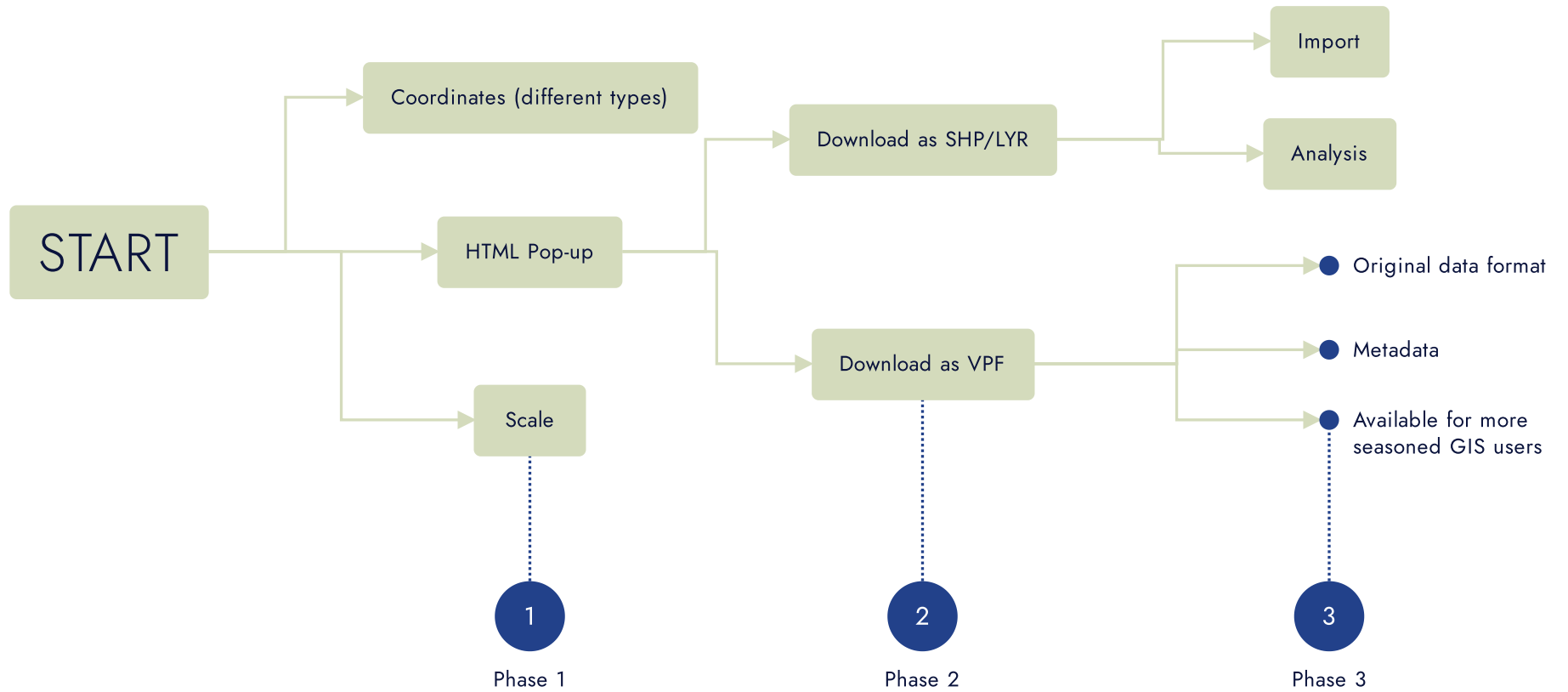
Improved accuracy: By streamlining the nautical chart acquisition process, we can ensure that the data being used for analysis is up-to-date and accurate. This will improve the overall accuracy of the analysis and reduce the potential for errors.



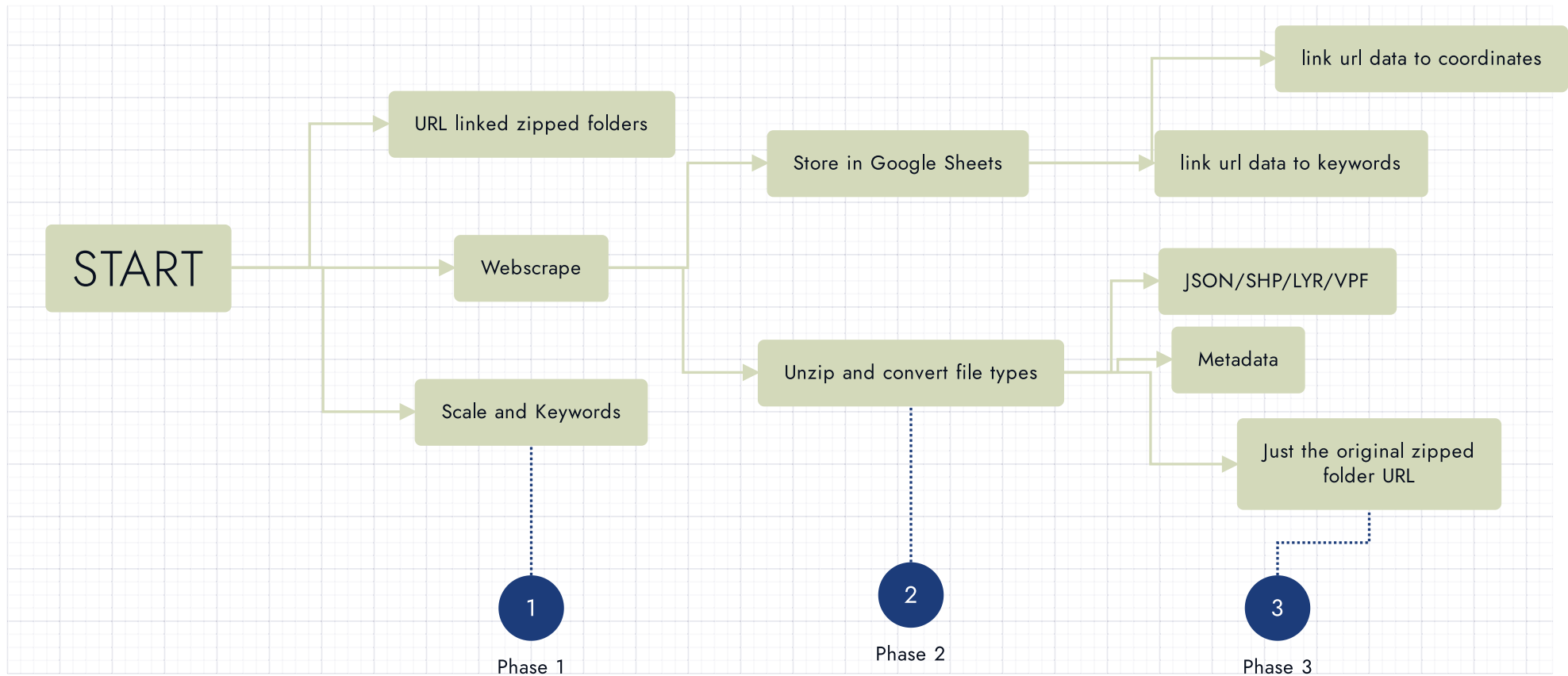
Point #3

Enhanced collaboration: By integrating the data into a centralized location, military analysis teams can collaborate more easily and effectively. This will allow for improved communication and a more streamlined workflow, ultimately resulting in better outcomes."

THE USER PROCESS



THE BACKGROUND PROCESS



FUTURE IDEAS FOR EXPANSION

1 Security

2 Old Data vs Present Data

3 Analysis Tools



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