

# DRAGONFLY

# AFP GRAPH ANALYTICS PLATFORM

10.55–11.40am

s22(1)(a)(ii)  
s22(1)(a)(ii)

AUSTRALIAN FEDERAL POLICE  
GRAPHWARE

OFFICIAL

s22(1)(a)(ii)

s22(1)(a)(ii)

s22(1)(a)(ii)



s22(1)(a)(ii)

s22(1)(a)(ii)

s22(1)(a)(ii)

for GraphAware AN/Z.



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# AGENDA

- INTELLIGENCE IN 2024
- WHAT IS A GRAPH DATABASE?
- WHAT IS HUME?
- AUSTRALIAN FEDERAL POLICE'S GRAPH JOURNEY WITH DRAGONFLY
- DEMO OF HUME

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# INTELLIGENCE IN 2024

EXCELLENT  
COLLECTION;

INFORMATION  
OVERLOAD

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# GRAPHS CONNECT EVERYTHING.

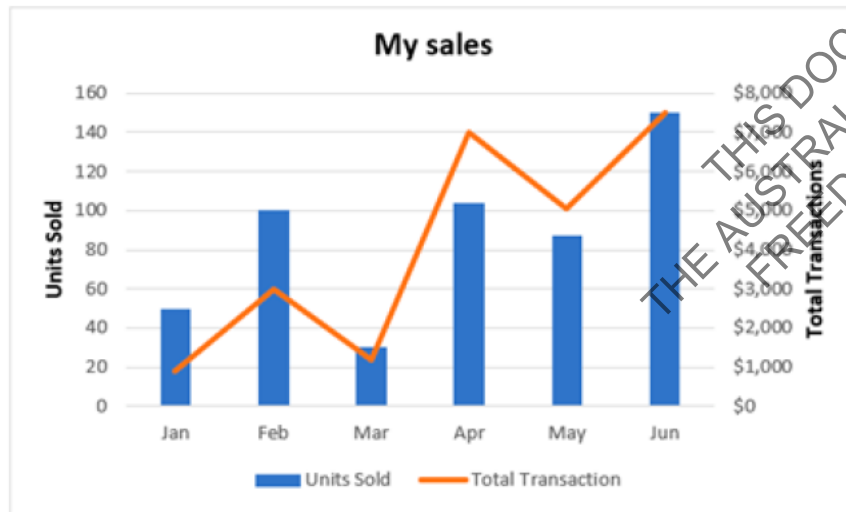
A GIANT LINK  
CHART OF  
EVERYTHING AN  
ORGANISATION  
HOLDS

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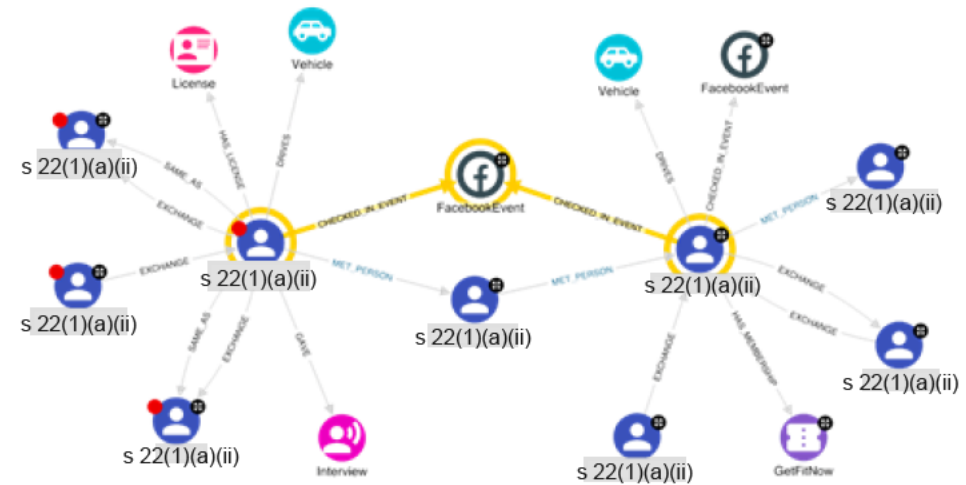


# WHAT IS A GRAPH?

THIS IS A CHART



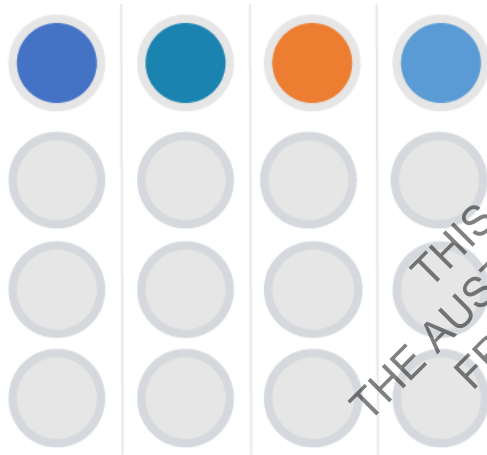
THIS IS A GRAPH



# RELATIONAL DATABASE



Relational Database



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Caller SIM	Callee SIM	Outgoing BTS	Incoming BTS	Timestamp	Call duration (sec)
0458685984	0488595496	12	365	2018-01-18 15:22:12	456
0458685984	0458685984	12	25	2018-01-18 22:24:12	35
0469875254	0498563201	879	567	2018-01-19 08:47:10	125
(...)	(...)	(...)	(...)	(...)	(...)

# GRAPH DATABASE



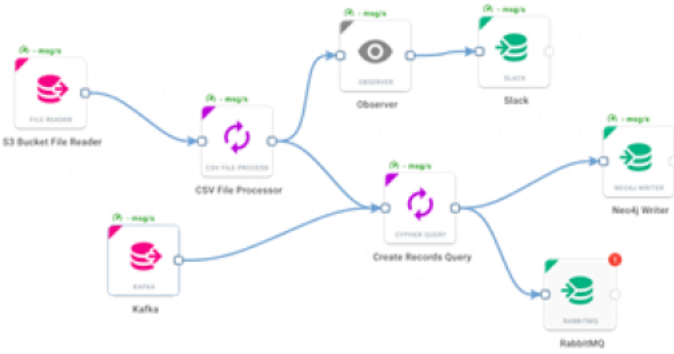
# GRAPH HAS HISTORY

GRAPHWARE HUME IS THE THIRD GENERATION OF LINK ANALYSIS

*“Link analysis procedures were used by officers... results confirmed the utility and potential value of these procedures.”*

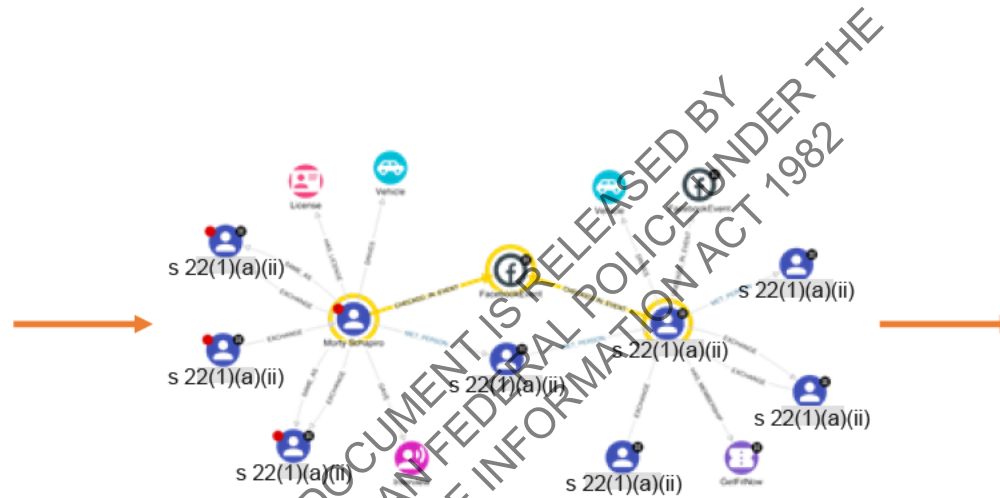
*Harper & Harris,  
1975, The Application*





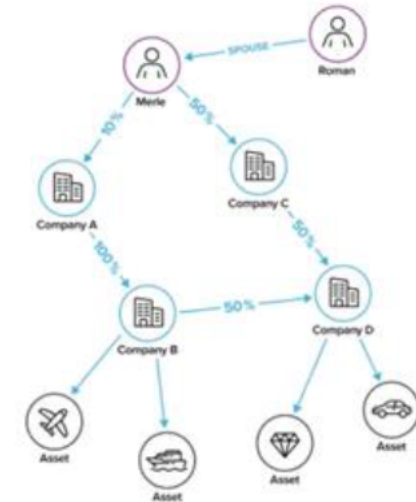
## SYNTHESISE

- Hume Orchestra
- Entity Resolution
- Entity Extraction from Text
- Specialised Ingestion



## ANALYSE

- Graph Powered
- Secure
- Geospatial and Temporal
- Entity 360 Action Boards



## SPECIALISE

- Digital Forensics
- Offender Monitoring
- Suspect Candidate Nomination
- Criminal Asset Confiscation

# DIGITAL FORENSICS

PC/ANZPAA  
POLICE CONFERENCE  
»2024

SINGLE PHONE ANALYSIS

MULTI-PHONE ANALYSIS

CONNECTIONS TO OTHER DATA  
STORES

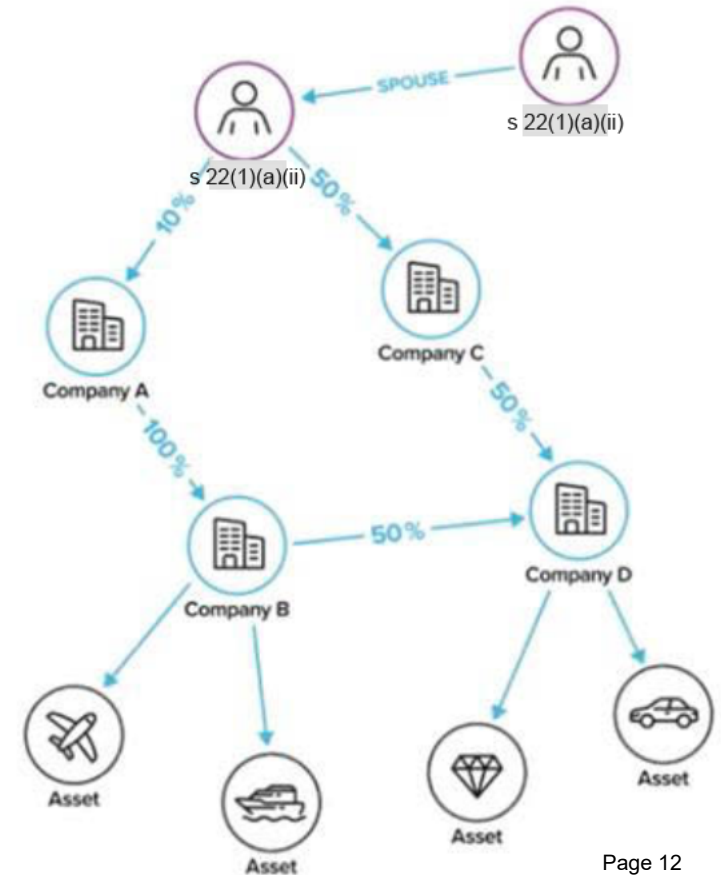
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# CRIMINAL ASSET CONFISCATION

FIND ASSETS HIDDEN IN  
COMPLEX FAMILY AND  
BUSINESS STRUCTURES.

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# SUSPECT NOMINATION

FIND SUSPECTS FOR HIGH  
VOLUME CRIMES

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## Scoring Results

Name	Gender	Age	Score	Vehicle Description	ANPR Reads	Previous Offences	Location Connection	Appearance	Detailed View
s 22(1)(a)(ii)	MALE	23	0.488						<a href="#">detailed view</a>
s 22(1)(a)(ii)	MALE	22	0.453						<a href="#">detailed view</a>
s 22(1)(a)(ii)	MALE	43	0.367			s 37(2)(b)			<a href="#">detailed view</a>
s 22(1)(a)(ii)	MALE	22	0.280						<a href="#">detailed view</a>
s 22(1)(a)(ii)	MALE	40	0.271						<a href="#">detailed view</a>

# CONSIDER THE MOST COMMON POLICING ANALYSES

- SHOW ME HOW PERSON X AND PERSON Y ARE INTERCONNECTED.
- SHOW ME HOW THIS GANG IS SOURCING THEIR FUNDS
- TELL ME THE ADDRESSES THIS PERSON MIGHT BE LOCATED AT
- SHOW ME THE COMMUNICATION EVENTS BETWEEN TWO INDIVIDUALS
- WHO ARE THE MOST INFLUENTIAL PARTIES WITHIN A CRIMINAL ORGANISATION?

THESE ARE QUESTIONS BEST ANSWERED USING GRAPHS.

# WHAT IS DRAGONFLY?



**DRAGONFLY IS THE AFP'S GRAPH ANALYTICS PLATFORM POWERED BY HUME.**

**DRAGONFLY PUTS CONNECTED DATA INTO THE HANDS OF ANALYSTS, INVESTIGATORS AND FRONT-LINE OFFICERS**

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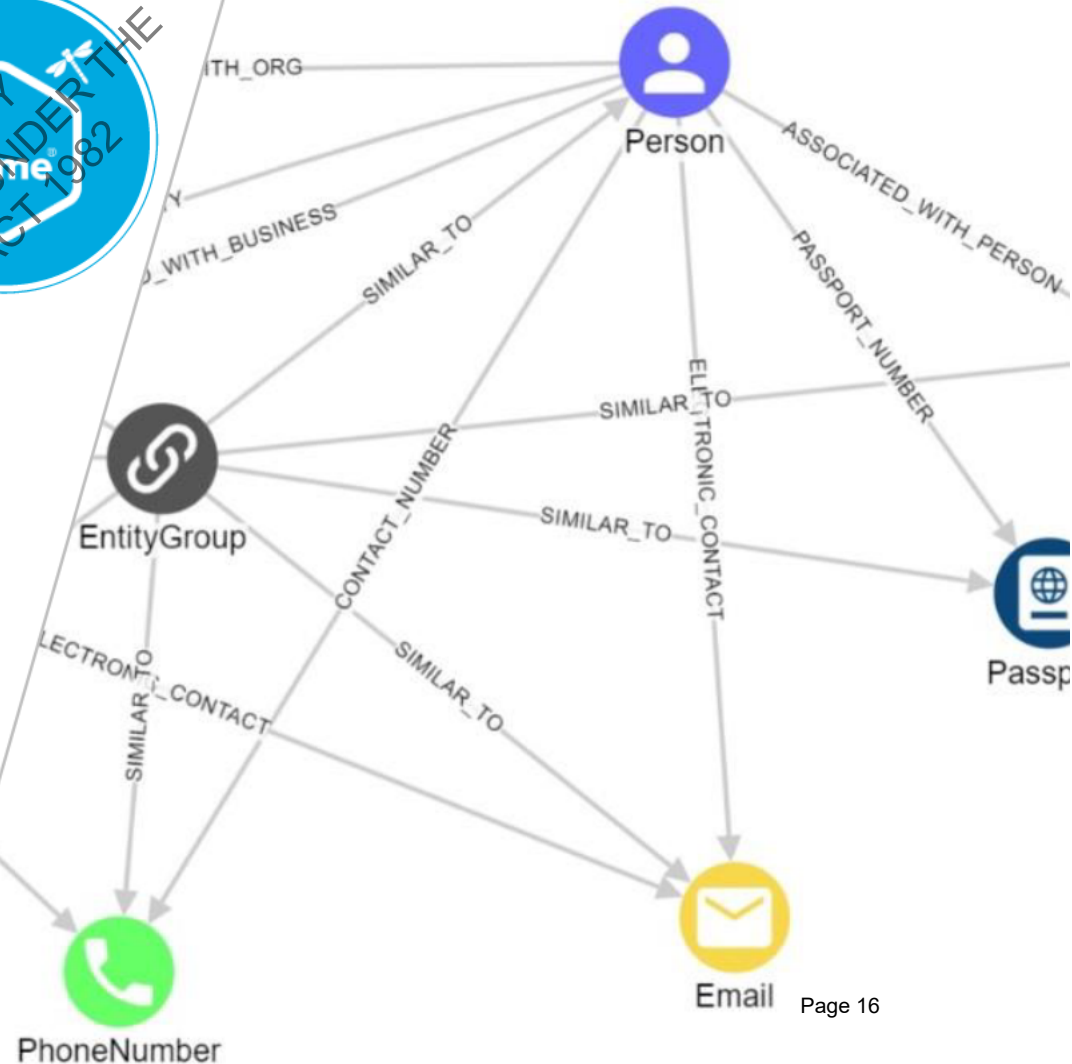
# DRAGONFLY HUME

- Analytical tool capable of identifying relationships between disparate sets of data.
- Specifically finds connections between:
  - People
  - Objects
  - Locations
  - Events
- Dragonfly *is not* a repository. It is a tool to access data available in separate data 'buckets'.
- Dragonfly *is not* a replacement of other charting tools.
- **Where to look first.**

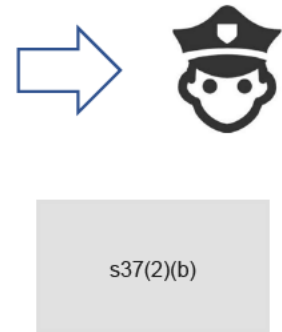
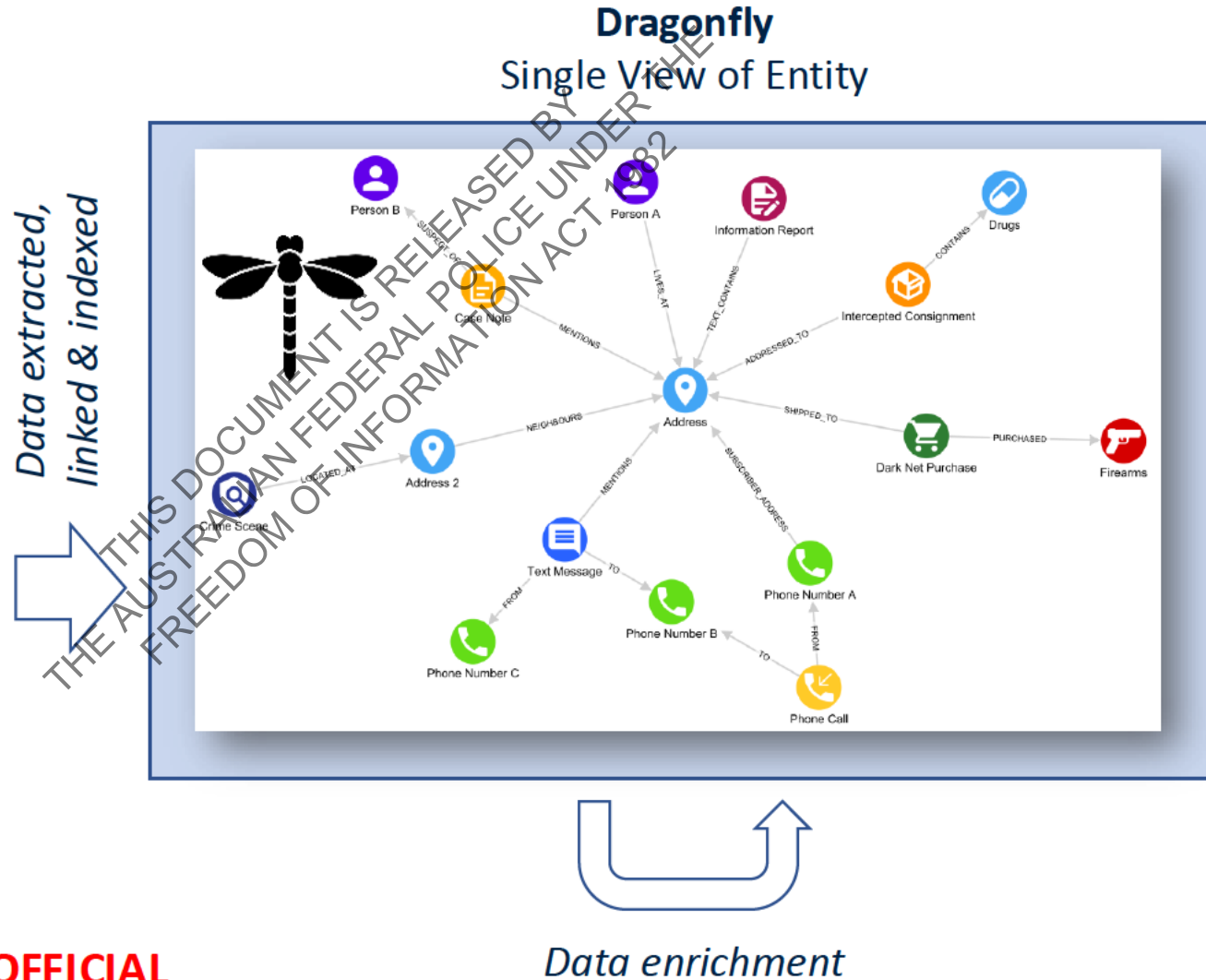
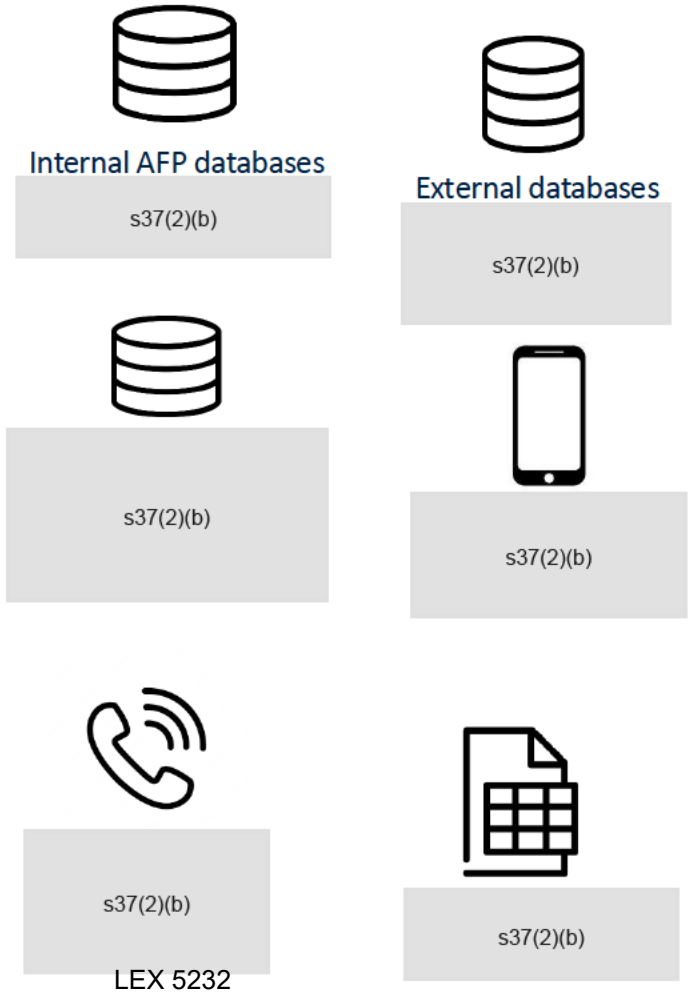
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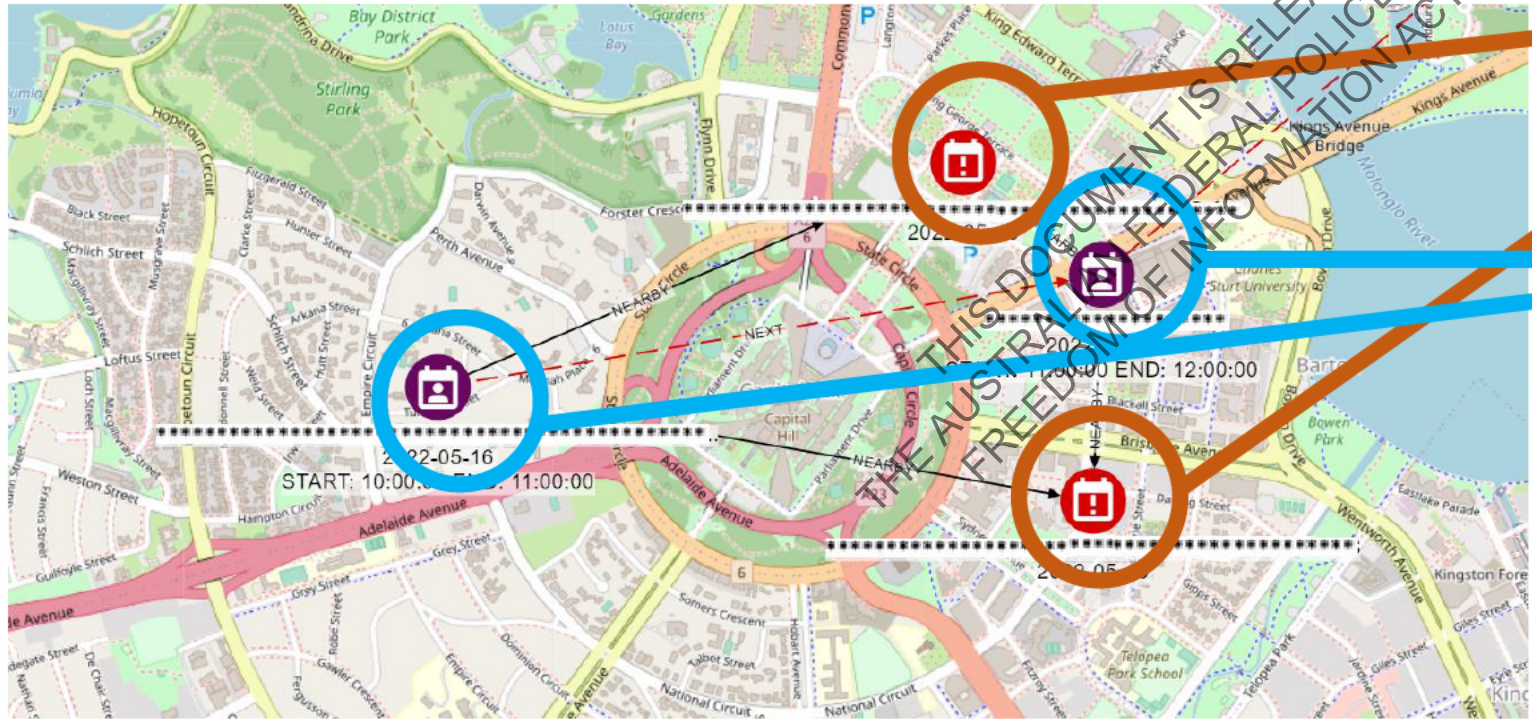
# DRAGONFLY HUME



**OFFICIAL**

# DRAGONFLY HUME

## Dragonfly Analytical Output – High Office Holder Risk from Event



“Threat” events

+

High Officer Holder Appointments

=

s 37(2)(b)

## Named Entity Recognition

AFP members need to access and analyse both structured (i.e. PROMIS, excel spreadsheets) and unstructured data (i.e. documents, transcripts).

While structured data is easy to process, store, and search, unstructured data cannot be handled in the same way without complex processing to manipulate it.

**Named Entity Recognition (NER)** is one technique used for information extraction within unstructured text, with the purpose of identifying entities and classifying them into predefined categories (i.e. address, phone number etc).

Dragonfly has built an NER service that will fit into the current data ingestion pipeline to extract entities from unstructured text from any dataset that is fed into Dragonfly.

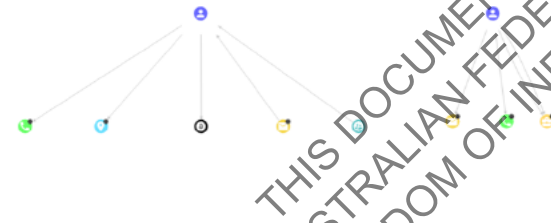
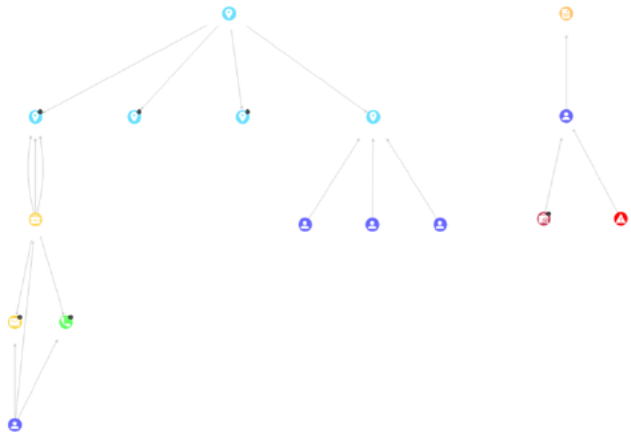




# DRAGONFLY HUME

## Simple Search and Visualisation

OVERVIEW SUBSCRIPTIONS ACTION BOARDS VISUALISATIONS



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JANE BKOOGS 1967

ADVANCED X

- Class PhoneNumber
- Class MACAddress
- Class IPAddress
- Class theftEventRECOVERED
- Class Call
- Class Theft
- Class Vehicle
- Class SpatialAnalysis

# DRAGONFLY HUME

## One Click Powerful Analysis



- ▶ 🔍 L001 - Find paths to another Dataset
- ▶ 🔍 L002 - Find paths to all other Datasets

*Actions can be run at members discretion*



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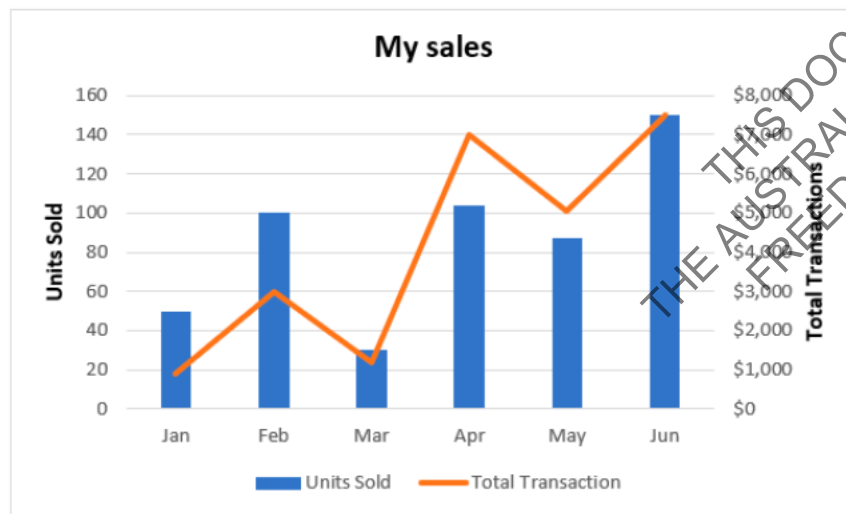
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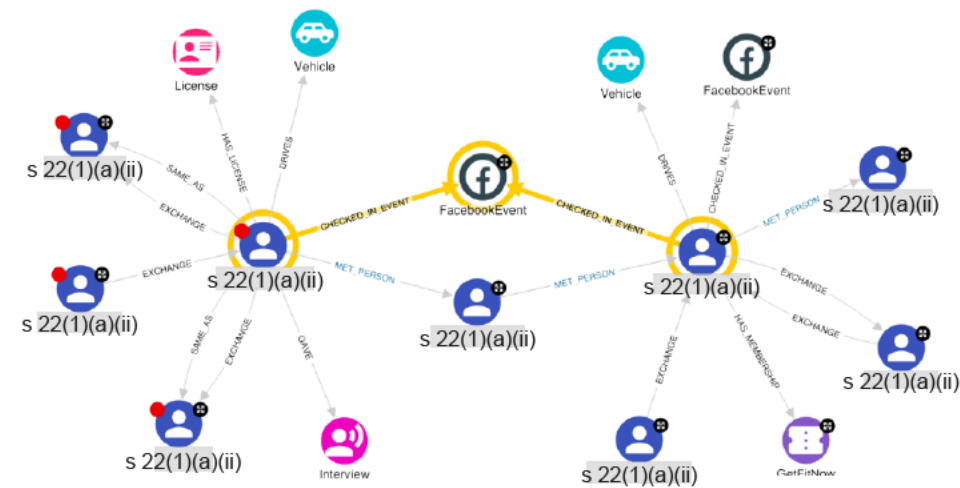


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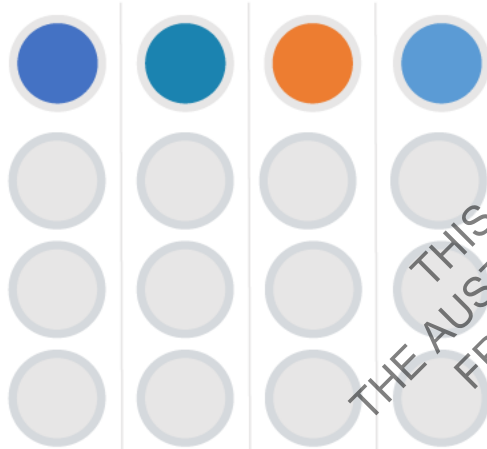
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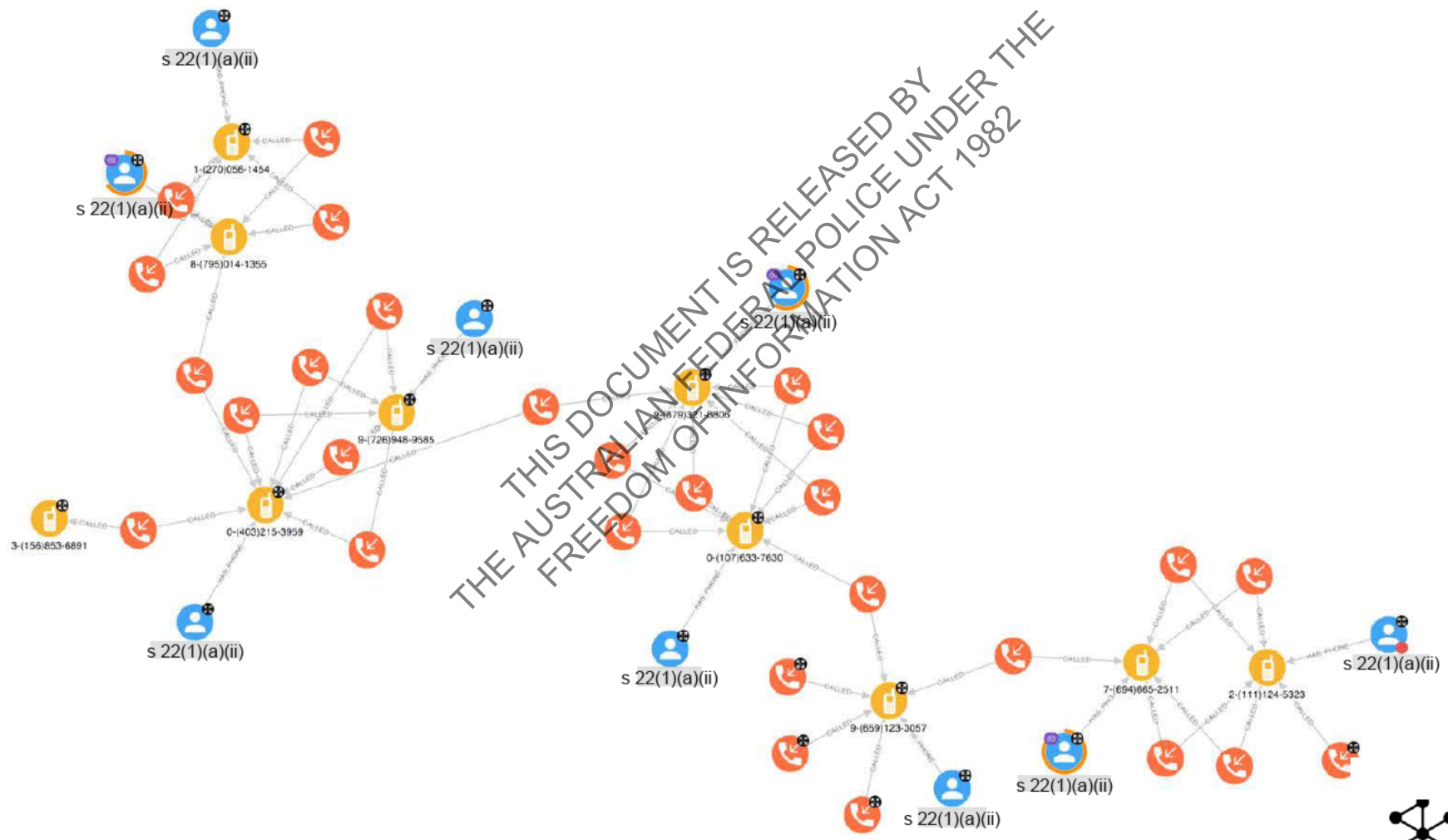
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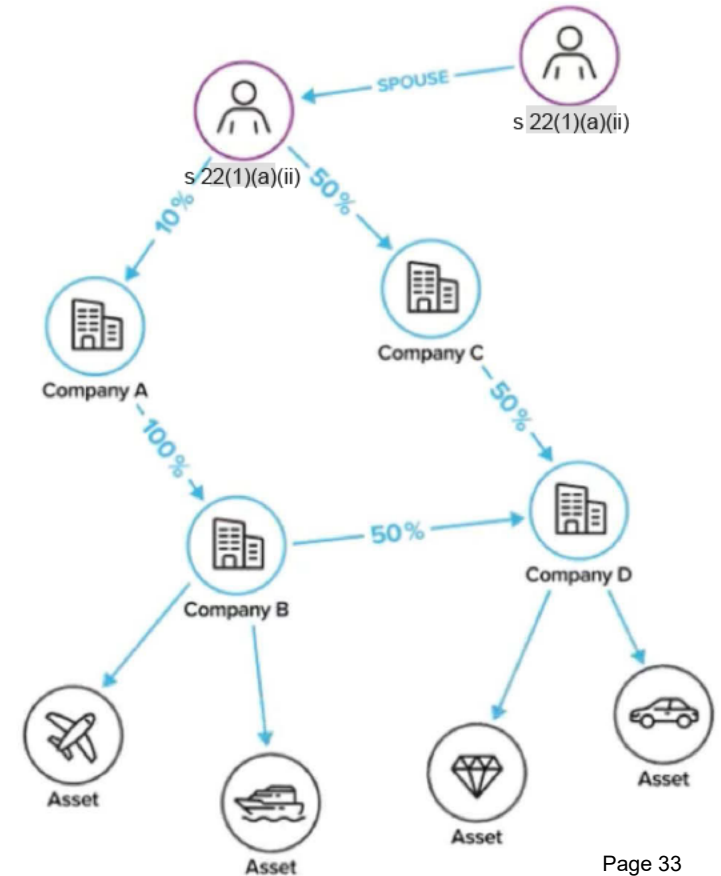
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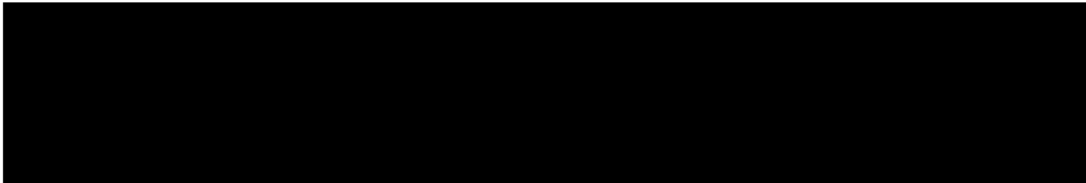
# TITLE OVER TWO LINES

9.40–9.45am

NAME, ORGANISATION



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