MICHIGAN

ENCRYPTION SURVEY FOLLOW-UP

Presented to: MPSCIB Encryption Workgroup

CISA/ICTAP-MI-SURVEY-001-R0

Background

- The survey was provided to all users of the Michigan Public Safety Communications System (MPSCS)

- Its purpose was to develop a snapshot of current and future use of encryption by system users

- The survey provided MPSCS staff with technical information as well as general user sentiments

- MPSCS will utilize the survey to further enhance the coordination of encryption use in Michigan on their radio system
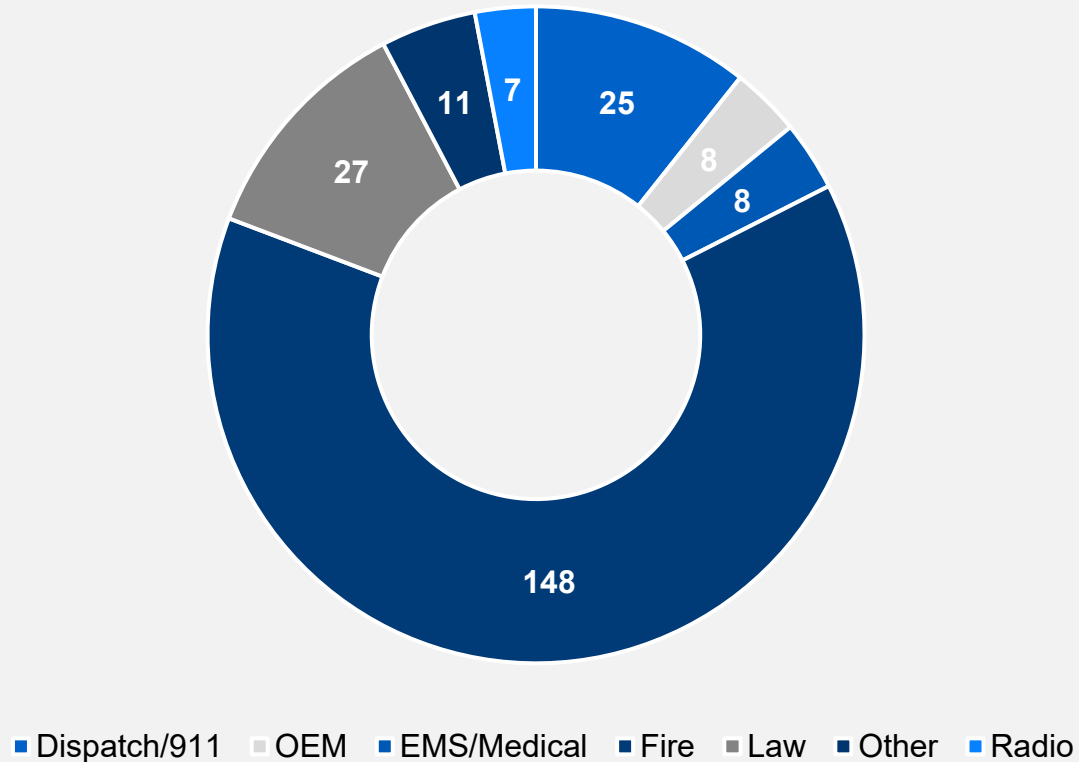
Survey Results

Reviewing the Current Picture to Prepare for the Future

Summary of Reponses

SURVEY RESPONDENTS BY PROFESSION

- Dispatch/911
- OEM
- EMS/Medical
- Fire
- Law
- Other
- Radio

Survey Sample

- ✓ 121 Total respondents

- ✓ 104 Agencies represented

- ✓ 104 Respondents provided focused data

Console Types in Use

NETWORK INTEGRATED WIRELINE CONSOLES BY MANUFACTURER

MOTOROLA
18

Network Integrated Wireline Consoles
Most Common Model(s)- MCC7500

OTHER REPORTED CONTROL STATIONS BY MANUFACTURER

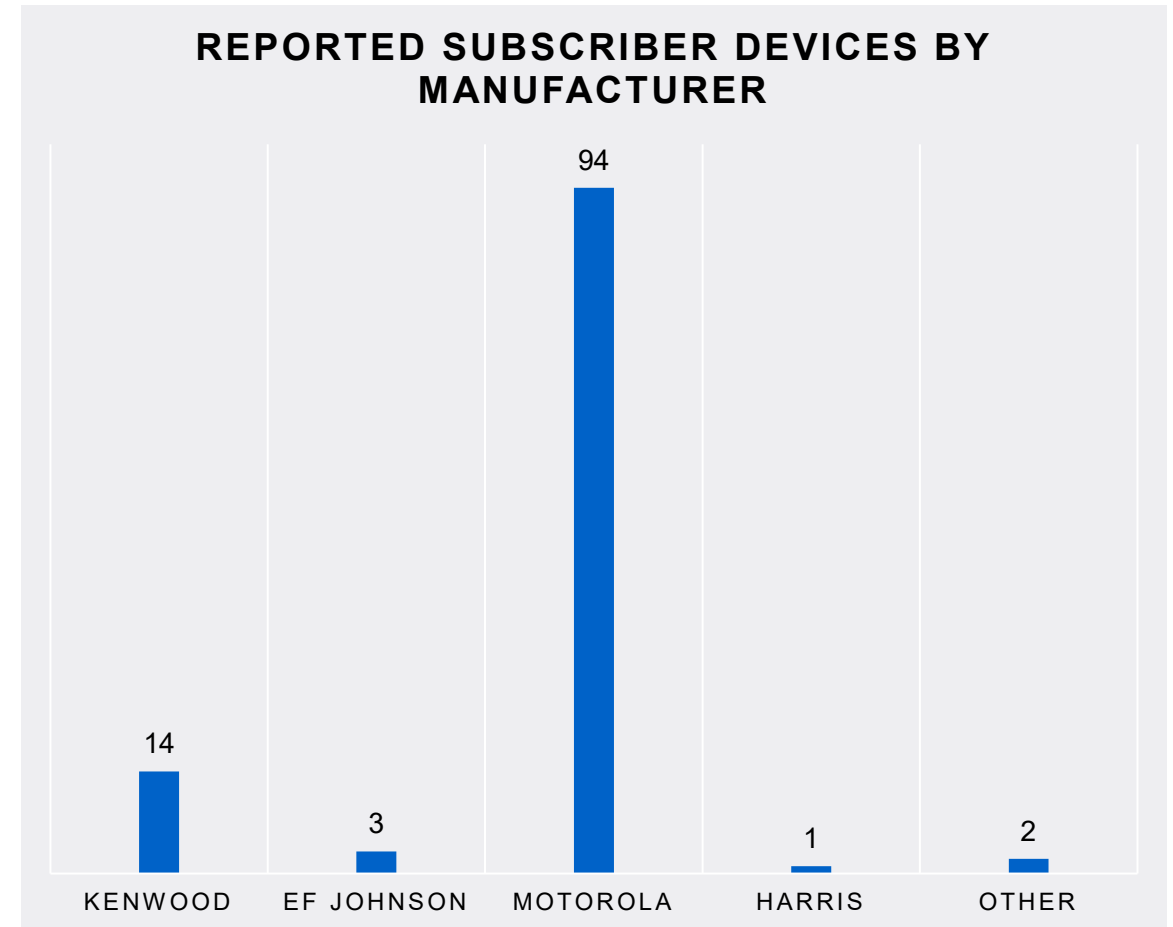| AVTEC	EF JOHNSON	MOTOROLA	TELEX	ZETRON
1	1	15	1	2

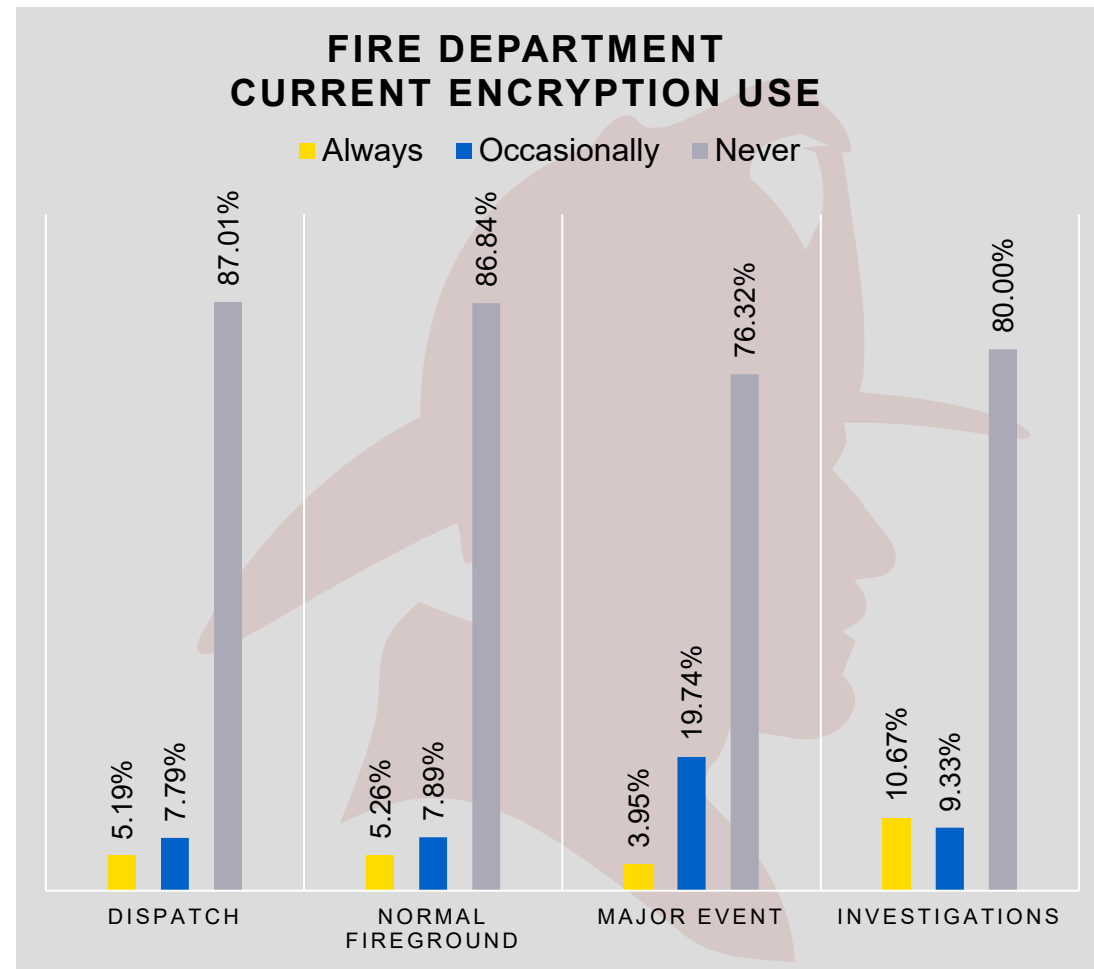Other Reported Control Stations and Desk Sets

Radio Types in Use

- Subscriber Device Manufacturers
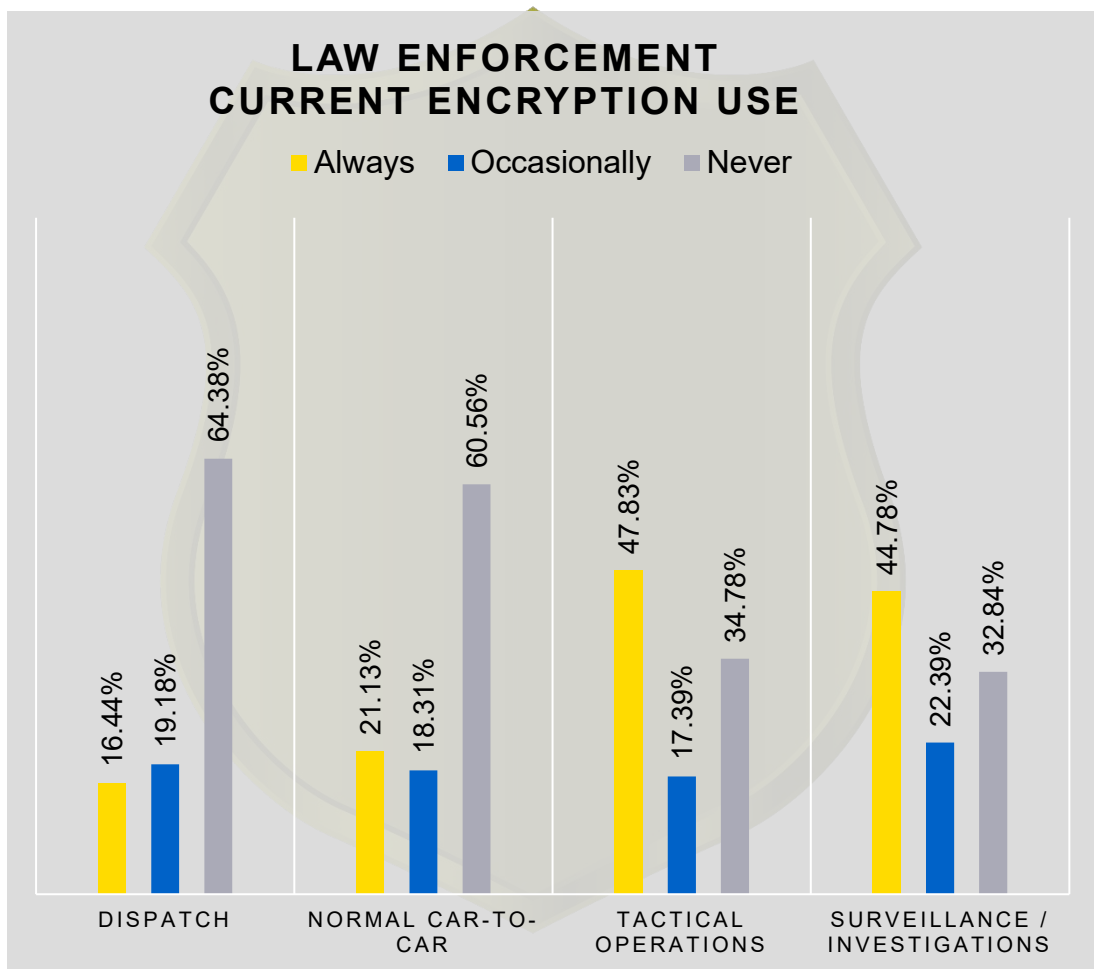 - Motorola
  - Kenwood
  - EF Johnson
  - Low Volume (Harris, Tait, Unication)

- Most Common Models
  - Motorola APX (6000, 6500, 4000, 4500)
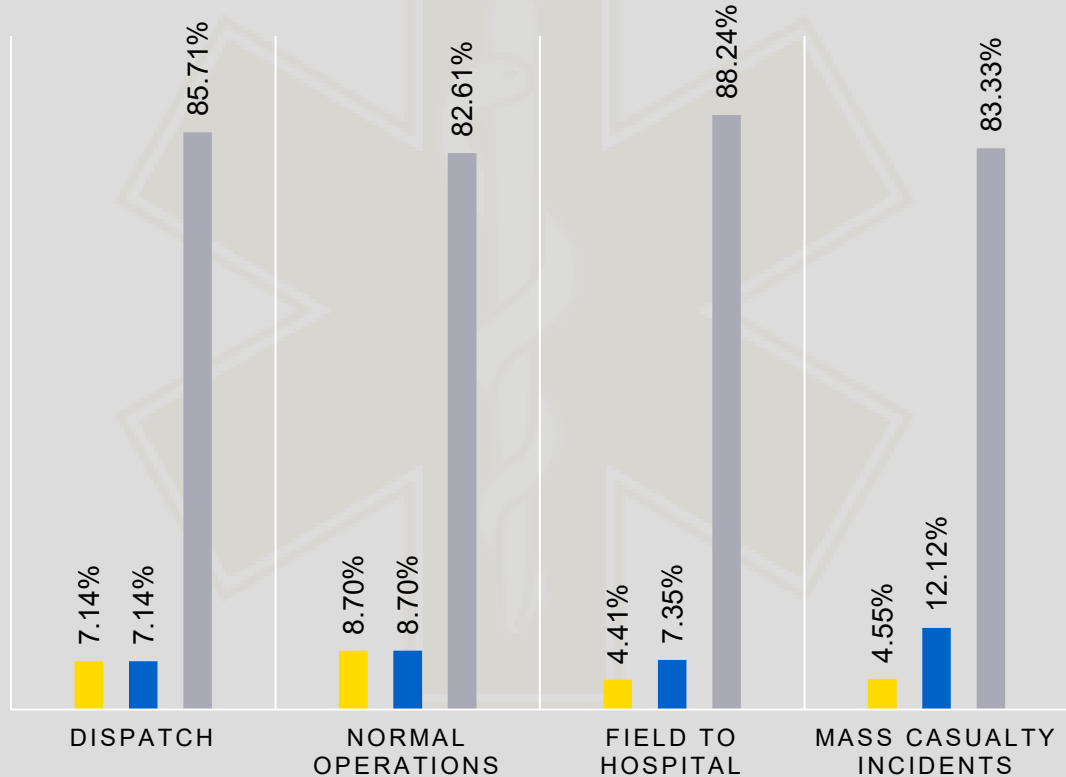 - Motorola XTS/XTL (XTS 5000, XTL 5000/2500)
  - Kenwood VM/VP Series

REPORTED SUBSCRIBER DEVICES BY MANUFACTURER

Manufacturer	Count
KENWOOD	14
EF JOHNSON	3
MOTOROLA	94
HARRIS	1
OTHER	2

Current Encryption Use – Police and Fire

LAW ENFORCEMENT CURRENT ENCRYPTION USE

■ Always ■ Occasionally ■ Never

DISPATCH: Always 16.44%, Occasionally 19.18%, Never 64.38%
NORMAL CAR-TO-CAR: Always 21.13%, Occasionally 18.31%, Never 60.56%
TACTICAL OPERATIONS: Always 47.83%, Occasionally 17.39%, Never 34.78%
SURVEILLANCE / INVESTIGATIONS: Always 44.78%, Occasionally 22.39%, Never 32.84%

FIRE DEPARTMENT CURRENT ENCRYPTION USE

■ Always ■ Occasionally ■ Never

DISPATCH: Always 5.19%, Occasionally 7.79%, Never 87.01%
NORMAL FIREGROUND: Always 5.26%, Occasionally 7.89%, Never 86.84%
MAJOR EVENT: Always 3.95%, Occasionally 19.74%, Never 76.32%
INVESTIGATIONS: Always 10.67%, Occasionally 9.33%, Never 80.00%

Current Encryption Use - EMS and OEM

MEDICAL SERVICES CURRENT ENCRYPTION USE
- Always
- Occasionally
- Never

DISPATCH: 7.14% / 7.14% / 85.71%
NORMAL OPERATIONS: 8.70% / 8.70% / 82.61%
FIELD TO HOSPITAL: 4.41% / 7.35% / 88.24%
MASS CASUALTY INCIDENTS: 4.55% / 12.12% / 83.33%

EMERGENCY MANAGEMENT CURRENT ENCRYPTION USE
- Always
- Occasionally
- Never

DISPATCH: 9.72% / 9.72% / 80.56%
DAILY OPERATIONS: 9.72% / 15.28% / 75.00%
RESPONSE OPERATIONS: 11.11% / 19.44% / 69.44%
RECOVERY OPERATIONS: 11.43% / 17.14% / 71.43%
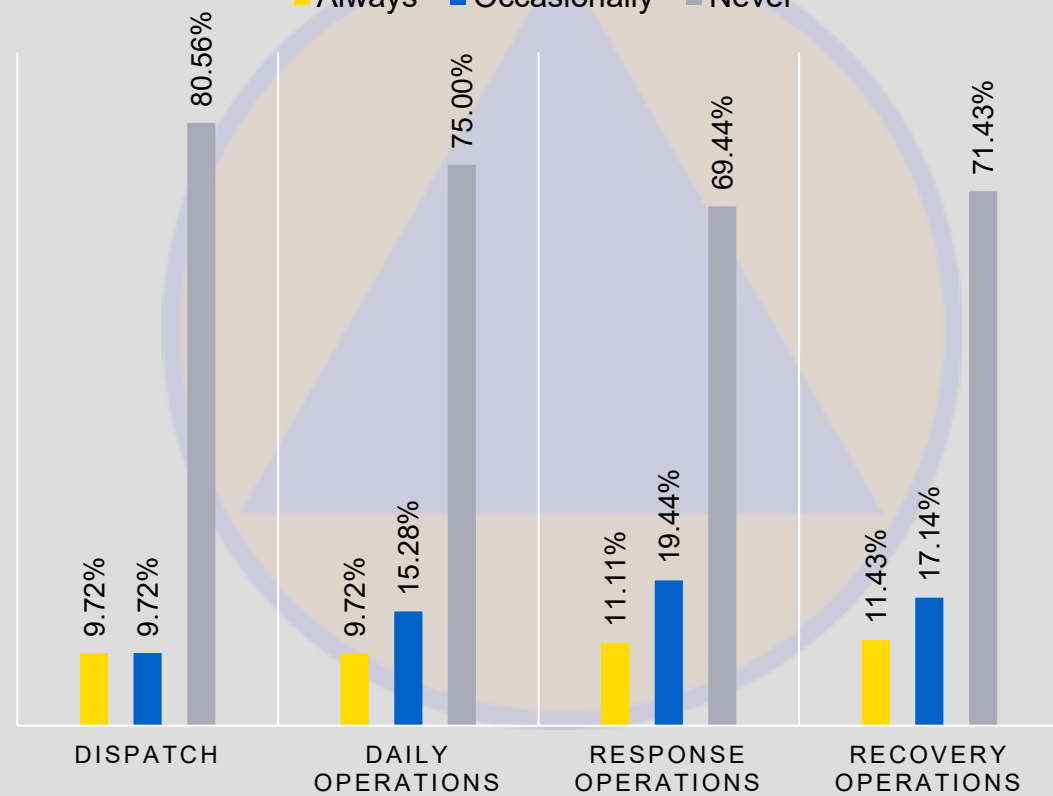
Algorithms in Use

DISTRIBUTION OF ALGORITHM USE
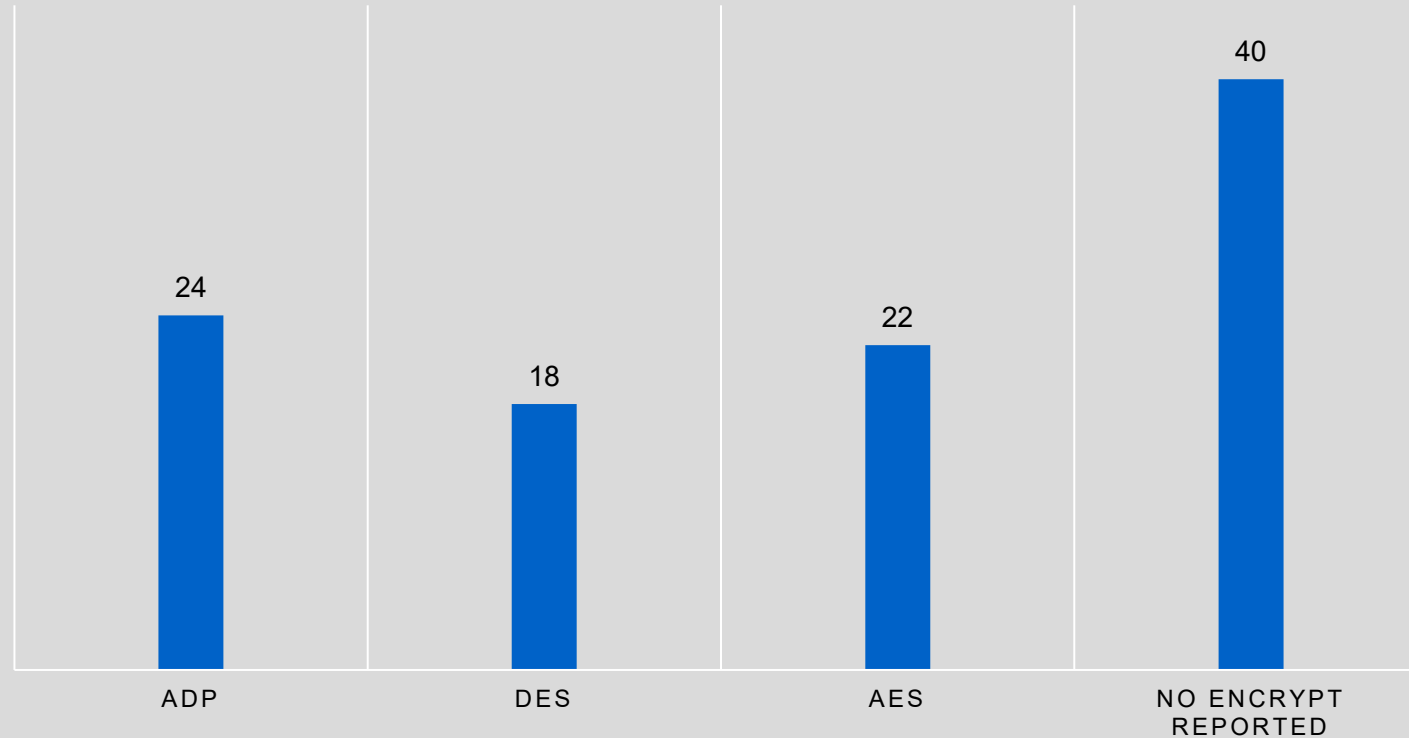
- The results indicate that while there is a significant use of P25 (AES) encryption there still remains the use of non-standard (ADP) and out of date (DES) algorithms.

SLN Usage and Conflicts

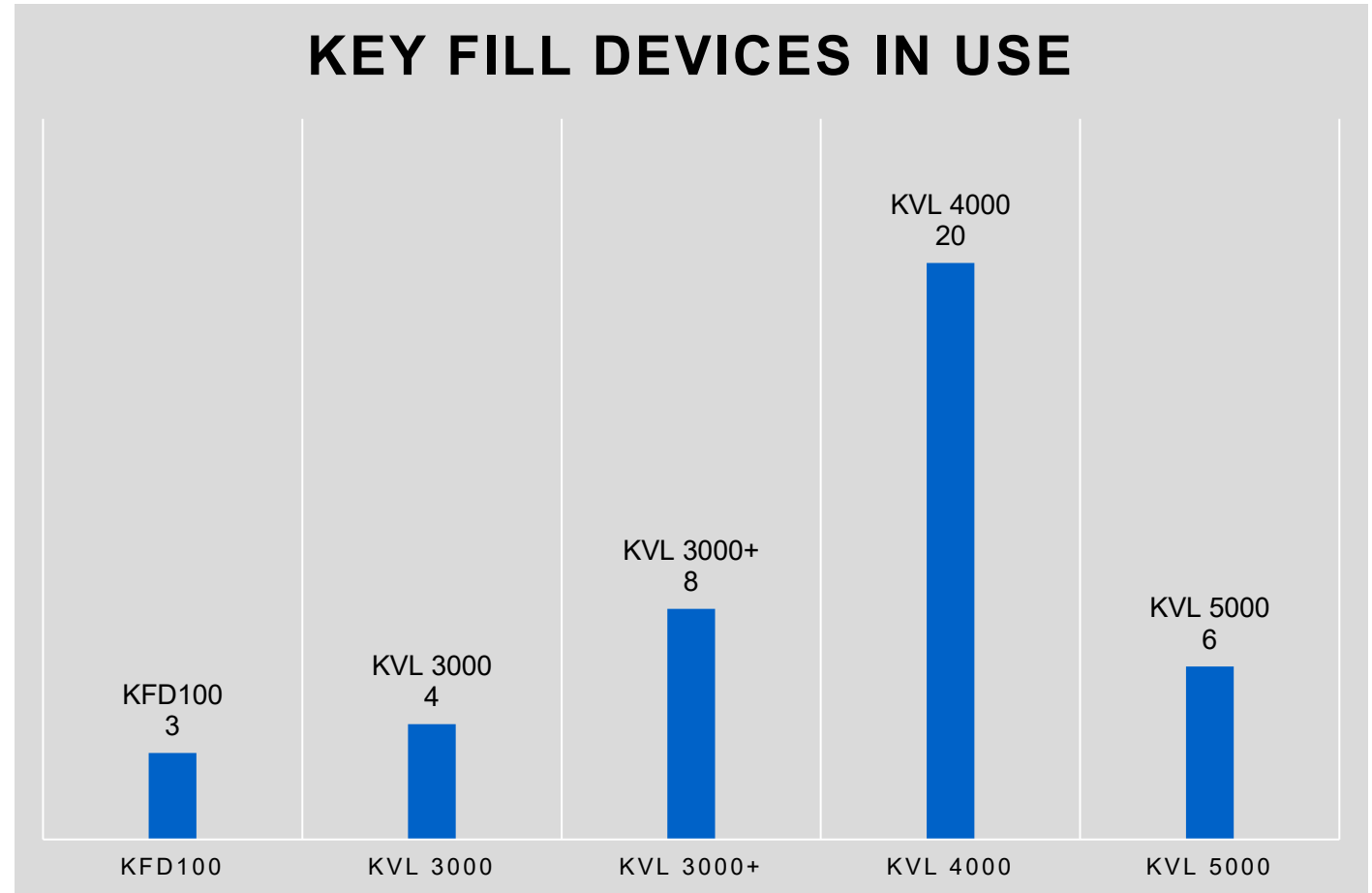| Submitting Agency	Other Agency Conflict	National Interop Conflict	NLECC Agency Conflict
City of Detroit	X[1]		X
FBI	X	X[1]	
Genesee County		X	
Houghton County			X
Kent County	X[1]		X
Mackinac Marine Rescue			
Macomb County	X[1]	X	X
Marysville Public Safety	X[1]	X	
MPSCS	X[1]		
Washtenaw Em Comms Consortium	X[1]		
WI Emergency Management	X[1]		X

✓ 89 SLNs in use

✓ 13 SLN conflicts (multiple agencies)

✓ 5 National Interop Key conflicts (SLN 1-20)

✓ 47 NLECC Range conflicts

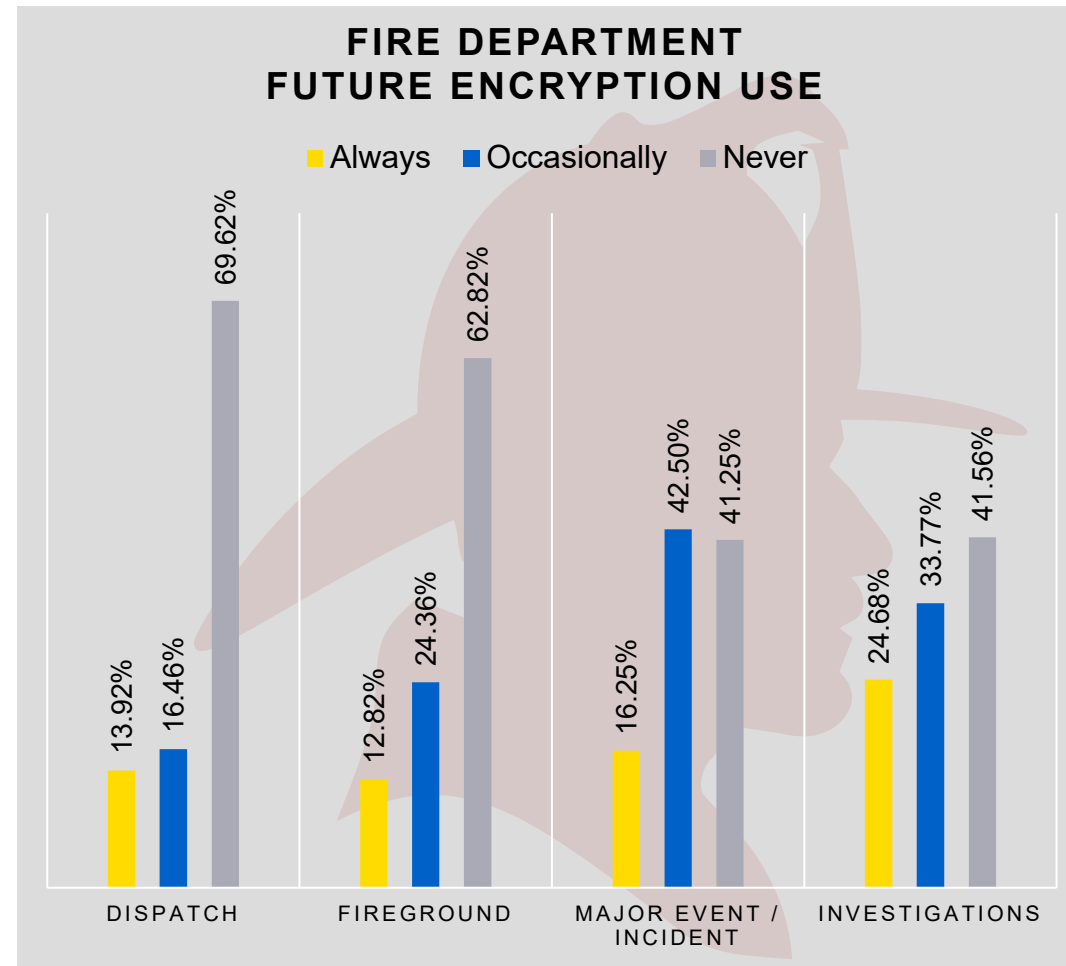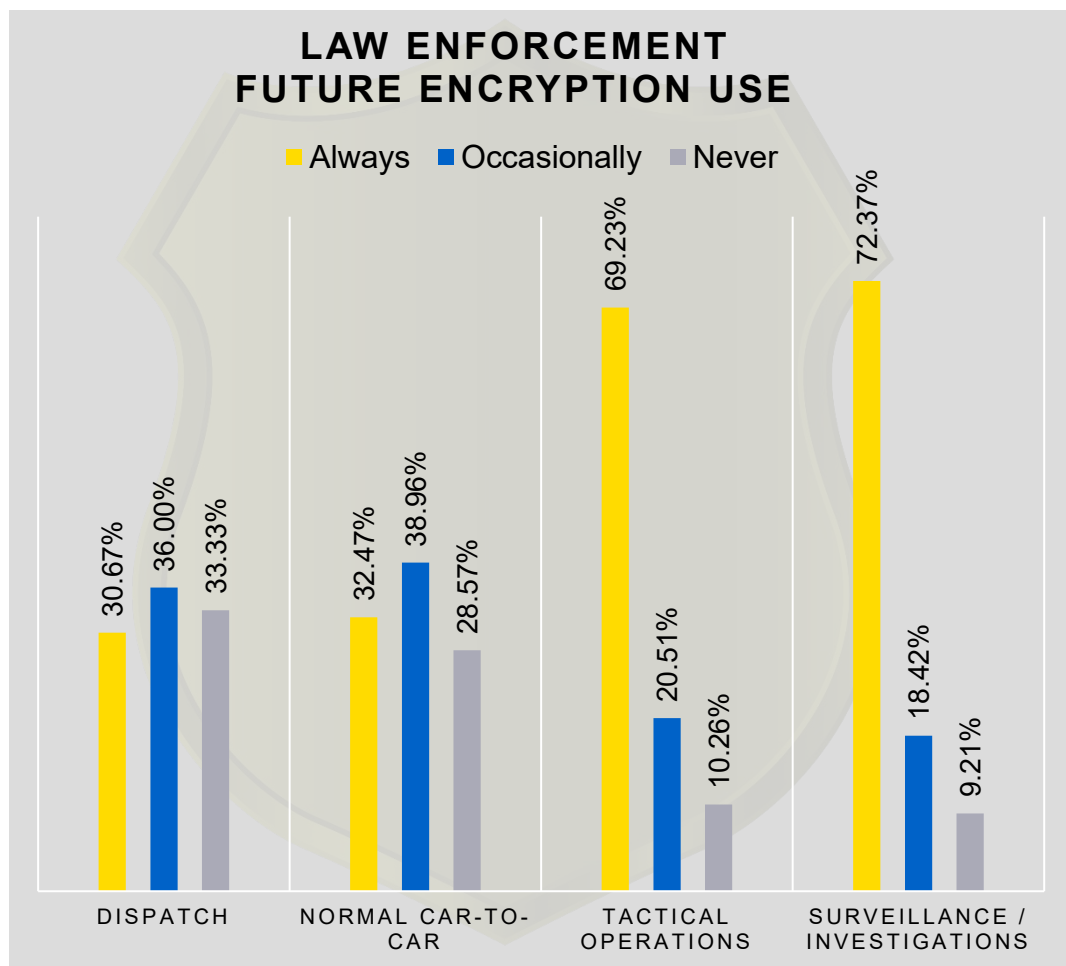1 = National Law Enforcement Communications Center reference.
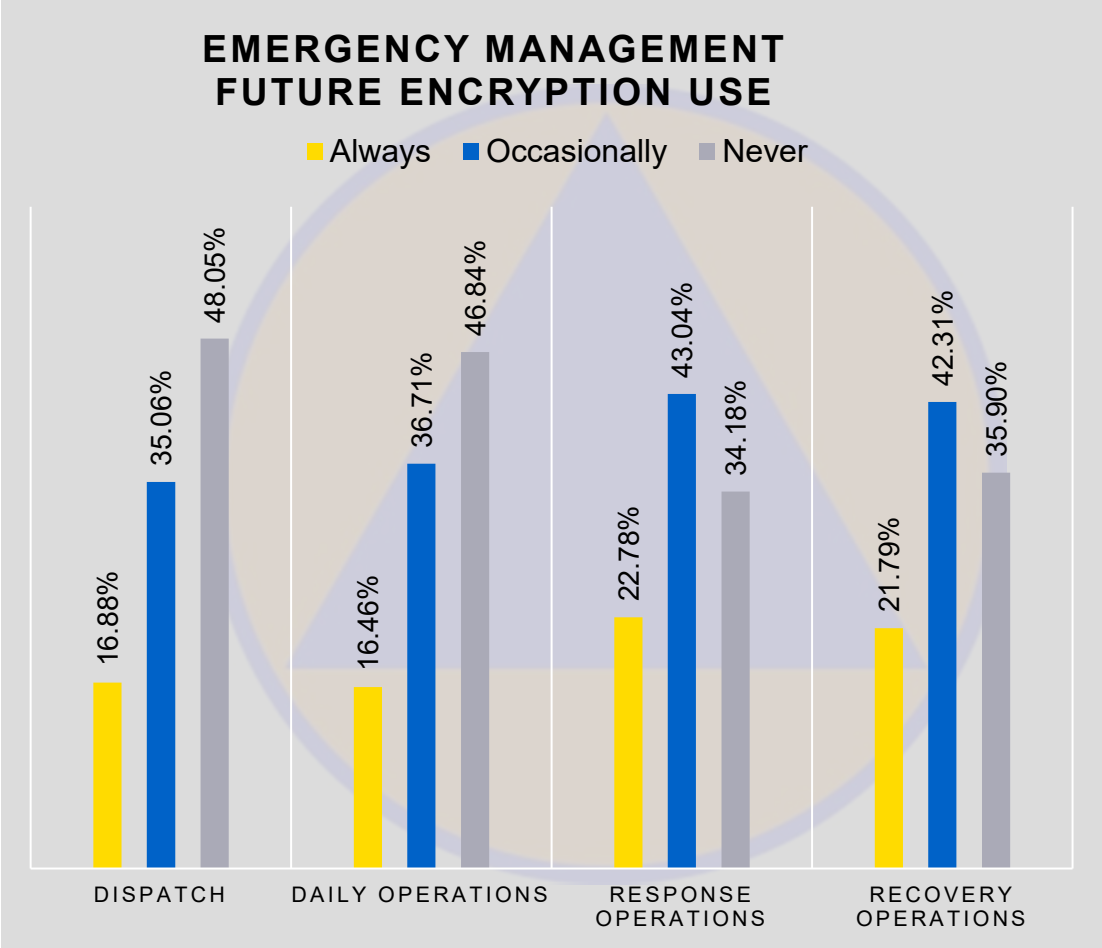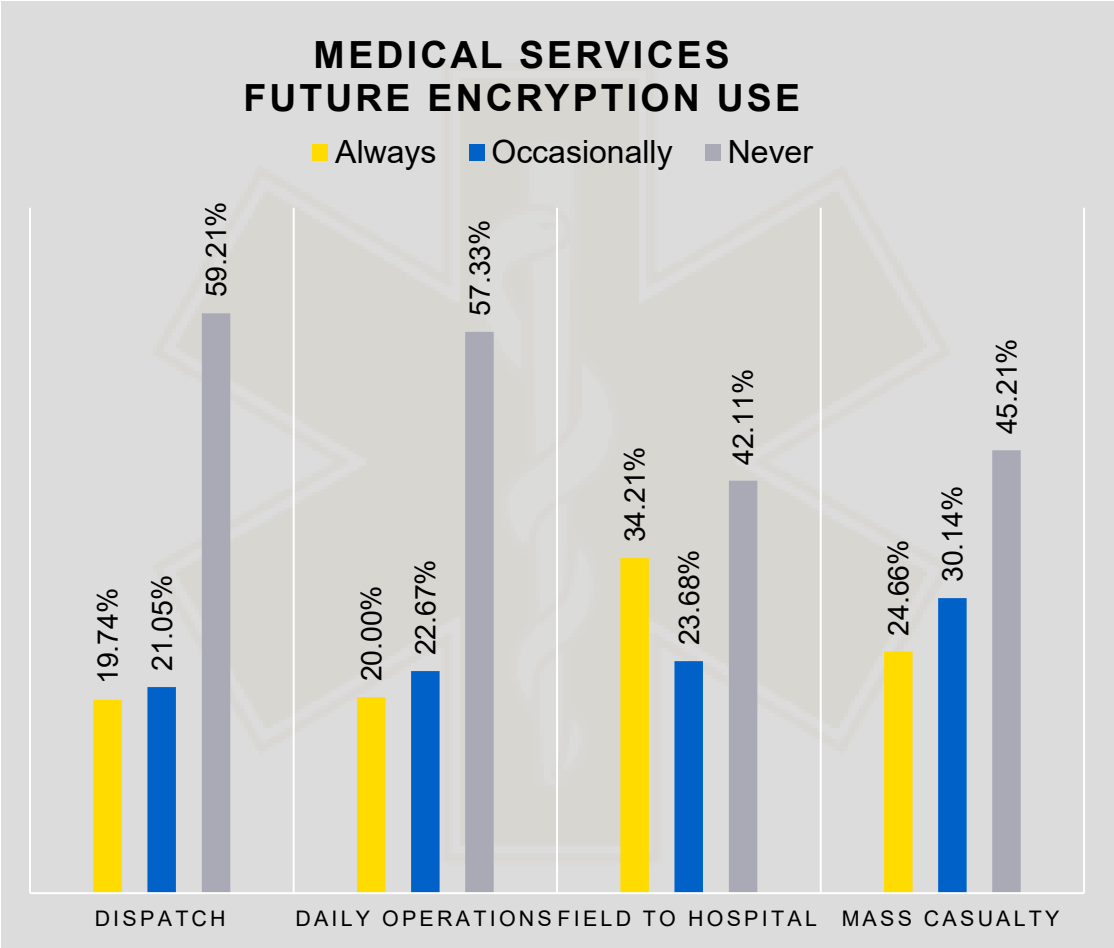
Key Fill Devices and KMF Usage

- Key Fill Devices In Use
  - Motorola
  - KFDTool

- 1 Known KMF In Use
  - FBI

KEY FILL DEVICES IN USE

KFD100: 3
KVL 3000: 4
KVL 3000+: 8
KVL 4000: 20
KVL 5000: 6

Future Encryption Interest – Police and Fire

LAW ENFORCEMENT FUTURE ENCRYPTION USE

Legend: Always (yellow), Occasionally (blue), Never (gray)

- DISPATCH: 30.67%, 36.00%, 33.33%
- NORMAL CAR-TO-CAR: 32.47%, 38.96%, 28.57%
- TACTICAL OPERATIONS: 69.23%, 20.51%, 10.26%
- SURVEILLANCE / INVESTIGATIONS: 72.37%, 18.42%, 9.21%

FIRE DEPARTMENT FUTURE ENCRYPTION USE

Legend: Always (yellow), Occasionally (blue), Never (gray)

- DISPATCH: 13.92%, 16.46%, 69.62%
- FIREGROUND: 12.82%, 24.36%, 62.82%
- MAJOR EVENT / INCIDENT: 16.25%, 42.50%, 41.25%
- INVESTIGATIONS: 24.68%, 33.77%, 41.56%

Future Encryption Interest - EMS and OEM

MEDICAL SERVICES FUTURE ENCRYPTION USE

Legend: ■ Always ■ Occasionally ■ Never

- DISPATCH: 19.74%, 21.05%, 59.21%
- DAILY OPERATIONS: 20.00%, 22.67%, 57.33%
- FIELD TO HOSPITAL: 34.21%, 23.68%, 42.11%
- MASS CASUALTY: 24.66%, 30.14%, 45.21%

EMERGENCY MANAGEMENT FUTURE ENCRYPTION USE

Legend: ■ Always ■ Occasionally ■ Never

- DISPATCH: 16.88%, 35.06%, 48.05%
- DAILY OPERATIONS: 16.46%, 36.71%, 46.84%
- RESPONSE OPERATIONS: 22.78%, 43.04%, 34.18%
- RECOVERY OPERATIONS: 21.79%, 42.31%, 35.90%

Current Encryption Partnerships

RANGE OF CURRENT ENCRYPTION PARTNERSHIPS

|		
16	6	9
YES, LOCAL	YES, LOCAL, STATE, FEDERAL	NO

- The goal by MPSCS staff will be to continue to facilitate partner coordination in their use of encryption.

- It is expected that the use of encryption by public safety agencies will continue to grow.

Request for Additional Encrypted TGs on State System

✓ Responses were split on need of additional encrypted talkgroups

✓ For agencies requesting additional talkgroups, **additional Event Channels** was most common request

REQUEST FOR ADDITIONAL STATE ENCRYPTED TGS
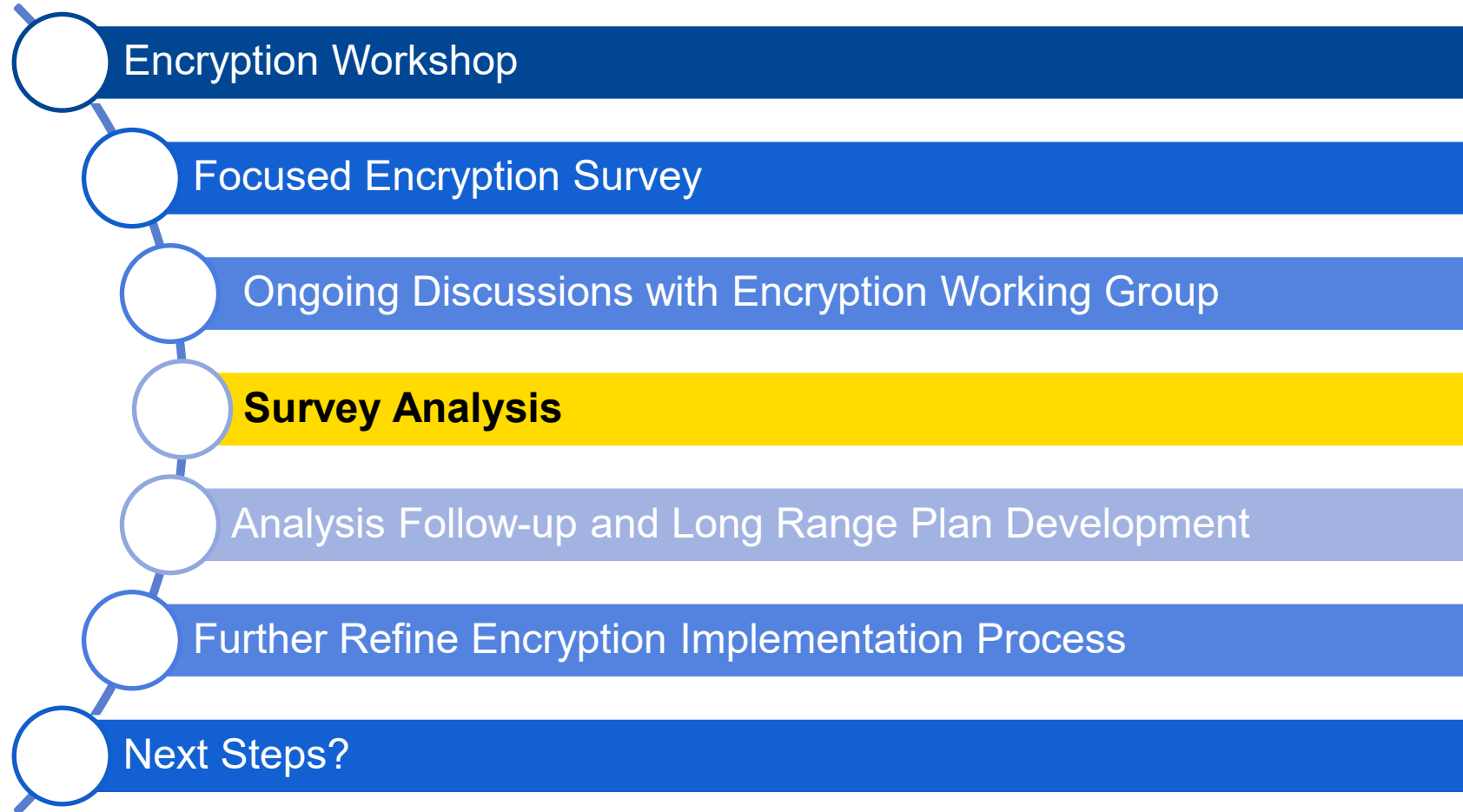

Unsure 11%

Yes 41%

No 48%
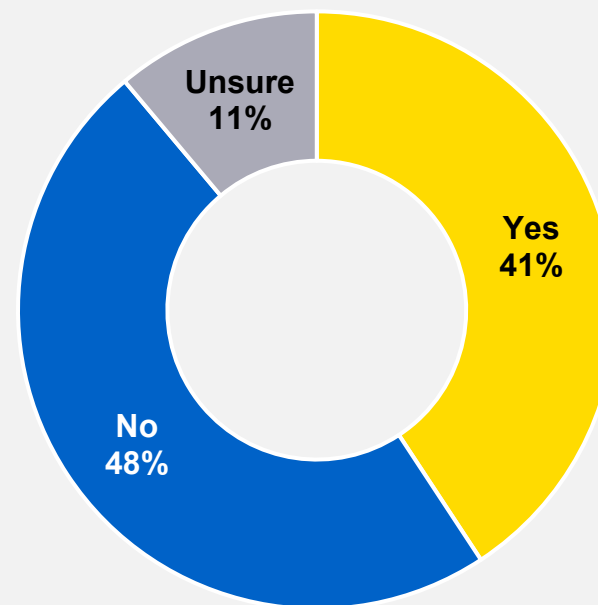
Gaps Identified

1. SLN/KID Deconfliction Needed (Long Term)

2. Identify Unknown Data Points

   - Key ID Identification

   - Algorithm Identification

3. Verify existing "shared keys" in SLN Usage List as part of deconfliction process.

Project Snapshot

- Encryption Workshop
- Focused Encryption Survey
- Ongoing Discussions with Encryption Working Group
- **Survey Analysis**
- Analysis Follow-up and Long Range Plan Development
- Further Refine Encryption Implementation Process
- Next Steps?

Recommended Next Steps

For more information:
www.cisa.gov

Questions?
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