TMA-AVS-01 Scoring Standards Committee

Alarm Validation Scoring Kickoff Presentation

Mark McCall
Stanley Security, Chair

David Holl
Lower Allen Township, Co-Chair

Larry Folsom
I-View Now/ADT, Co-Chair

Larry Dischert
LRD Consulting, Recording Secretary

Agenda

September 10th 2020 – Kickoff Meeting

• Anti-trust Statement
• Housekeeping
• Schedule for upcoming calls
  • 9/10, 4:30E/1:30P
    • Kickoff Call
  • 9/17, 4:30E/1:30P
    • Review TMA/PPVAR Scoring Overview Whitepaper
    • Review working draft document for standard
    • Discuss upcoming schedules/calls and initial tasks/assignments

• Committee Makeup
• TMA-AVS-01 Overview
• Public Safety Presentation
  • Why a Scoring Standard is important to Public Safety
• MCP Presentation
  • Injury Severity Prediction Model used by OnStar – How it relates
# Housekeeping

**September 10th 2020 – Kickoff Meeting**

## TMA-AVS-01 Kickoff

**Together. Moving. Ahead.**

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## Committee Makeup

**Alarm Industry Member Name and Affiliations**

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Name</th>
<th>Company</th>
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<tbody>
<tr>
<td>Anita Ostrowski</td>
<td>Vector Security, Inc.</td>
<td>Morgan Hertel</td>
<td>Rapid Response Monitoring</td>
</tr>
<tr>
<td>Anthony Tanzione</td>
<td>Affiliated Monitoring</td>
<td>Noe Avalos</td>
<td>G4S Secure Integration</td>
</tr>
<tr>
<td>Anthony Sharpy</td>
<td>Guardian Alarm</td>
<td>Sean Githens</td>
<td>Redwire</td>
</tr>
<tr>
<td>Chris Newhook</td>
<td>American Alarm and Communications, Inc.</td>
<td>Shane M. Clary, Ph.D.</td>
<td>Bay Alarm Company</td>
</tr>
<tr>
<td>Joe Allen Gentry</td>
<td>Washington Alarm Inc</td>
<td>Stan Martin</td>
<td>SIAC</td>
</tr>
<tr>
<td>Joey Rao-Russell</td>
<td>Kimberlite</td>
<td>Steve Butkovich</td>
<td>CPI Security Systems</td>
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<tr>
<td>Larry Robert Dischert</td>
<td>LRD Consulting-JCI/Tyco</td>
<td>Susie Nye</td>
<td>AvantGuard Monitoring Center</td>
</tr>
<tr>
<td>Lucinda Guerrero</td>
<td>Bay Alarm Company</td>
<td>Teresa Gonzalez</td>
<td>Lydia Security Monitoring, Inc. dba: CDPS &amp; UCC</td>
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<tr>
<td>Mark E McCall</td>
<td>Stanley Security</td>
<td>Thomas Nakatani</td>
<td>ADT</td>
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<tr>
<td>(Chair)</td>
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## Committee Makeup

### Manufacture/Software/Service Providers Member Name and Affiliations

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<tr>
<td>Alison Chase</td>
<td>Alarm.com</td>
<td>Randall Gellens</td>
<td>Core Technology Consulting</td>
<td></td>
</tr>
<tr>
<td>Bob Finocchioli</td>
<td>Evolon</td>
<td>Rick Denos</td>
<td>MAS</td>
<td></td>
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<tr>
<td>Chris Brown</td>
<td>Immix</td>
<td>Ryan Fouts</td>
<td>RapidDeploy</td>
<td></td>
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<tr>
<td>John Romanowich</td>
<td>SightLogix</td>
<td>Sascha Kylau</td>
<td>OneTel</td>
<td></td>
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<tr>
<td>Kevin Stadler</td>
<td>Evolon Technology</td>
<td>Stephen Tapper</td>
<td>Immix Software (Formerly SureView Systems)</td>
<td></td>
</tr>
<tr>
<td>Larry Folsom (Co-Chair)</td>
<td>I-View Now</td>
<td>Thom Meyer</td>
<td>Bold Group</td>
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<tr>
<td>Mark Skeen</td>
<td>JCI/Qolisys</td>
<td>Tim Tracy</td>
<td>Resideo Technologies, Inc.</td>
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## Committee Makeup

### Public Safety Member Name and Affiliations

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<tbody>
<tr>
<td>Andy King</td>
<td>City of Franklin Fire Department</td>
<td>Nicola Tidey</td>
<td>Mission Critical Partners, Inc.</td>
<td></td>
</tr>
<tr>
<td>David Holl (Co-Chair)</td>
<td>Lower Allen Dept of Public Safety</td>
<td>Kirk MacDowell</td>
<td>MacGuard Security Advisors Inc</td>
<td></td>
</tr>
<tr>
<td>Frank Fernandez</td>
<td>Miami Police (Ret.) Reserve Officer</td>
<td>Sam Bauder</td>
<td>Intrado</td>
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<tr>
<td>Jay English</td>
<td>APCO</td>
<td>Steve Schmit</td>
<td>UL LLC</td>
<td></td>
</tr>
<tr>
<td>Michael Brown</td>
<td>National Sheriffs Association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tony Dunsworth</td>
<td>City of Alexandria</td>
<td></td>
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### NRTL and Specialty Experts Member Name and Affiliations

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TMA-AVS-01 Overview

Standard Monitoring Center Workflow

- Alarm Activated
- Alarm Received by the Monitoring Center
- Alarm Processed by Monitoring Center Software
- Agent Calls Responsible Parties
- Monitoring Center Agent Receives and Processes the Alarm
- Monitoring Center Agent calls the ECC admin line to report the alarm

TMA-AVS-01 Overview

OnStar Model

Advanced Automatic Collision Notification (AACN) to ECC/PSAP Workflow

- Upon crash, vehicle initiates a wireless call to the TSP, transmits VEDS data
- TSP assesses the situation, predicts injury severity, notifies 911 by phone
- TSP operator verbally transmits select data to the 911 call taker
- 911 continues caller interrogation, uses CAD to dispatch responders
TMA-AVS-01 Overview

Potential Data Sources

Panel Data
- Any burglar alarm
- Multiple trips same zone
- Multiple trips different zone
- Recent closing/opening
- Perimeter alarm
- Interior alarm
- Perimeter, followed by Int
- Glass break
- Smoke alarm
- Schedule exceptions
- Alert/cancel
- Time of event

Audio Data
- Weather heard, thunder, etc.
- Breaking or destruction
- Voices heard
- Elevated conversation heard
- No audio
- Audio of activity (walking, doors, etc.)

Personal Data
- Occupants phones not on site
- Occupants phone on site at alarm
- Other phones (keyholder list) on site at alarm
- GPS shows occupants not home
- GPS show occupants at home
- Event initiated
- Event confirmed
- Other end user/customer input

Other Data Source
- Twitter, Nextdoor, etc. (social media) feeds with key word
- RSS feeds, utility companies, etc.
- PD alerts, broadcasts live
- Crime reports
- Crime index for location
- Customer specific/environmental
- Predictive analytics, fire equipment
- GPS show occupants at home
- Event confirmed
- Other end user/customer input

Biometric Data
- Facial recognition, friend seen
- Facial recognition, foe seen
- Facial recognition, no match
- Voice match, friend
- Voice match foe
- Voice match unknown

Environmental Data
- Weather harsh
- Weather good
- Interior temperature normal
- Interior temperature high/low
- CO level normal
- CO level high
- Power outage

Video Data
- People seen
- People have weapons
- People have burglary tools
- Vehicles seen, recognized or not
- License Plate Readers, unknown plate
- People remaining, loitering
- Vandalized property
- Severe weather seen
- Smoke/Fire

Additional Data Sources

1. Interactive service platforms
2. End user interactive Notifications
3. Video
4. Data / video analytic sources
5. IoT platforms
6. There are many potential data sources

Alarm Event Scoring
Using the TMA Standard the available alarm event data elements are scored and an alarm event confidence score is calculated by and / or is made available to the monitoring center agent.

Monitoring Platform Data Source Examples
- Alarm zones
- Account schedule
- Account history
- Account responsible parties
- Account address

Alarm Activated

Monitoring Platform Data Elements

Agent transmits the alarm event score during the course of the dispatch process

ECC call taker receives the score as part of the alarm processing
TMA-AVS-01 Overview
Threat Level Determination

Standards committee to define terminology, Scoring metric methodology, actual number of event assessment levels, etc.

TMA-AVS-01 Scoring Standards Committee
Public Safety
Why a Scoring Standard is important to Public Safety

David Holl
Lower Allen Dept of Public Safety
Jay English
APCO (Association of Public-Safety Communications Officials)
Frank Fernandez
Miami Police (Ret.) Reserve Officer
Public Safety

WHY this standard is critical!

- Life safety for owners and occupants – Both commercial and residential
- Officer Safety Enhanced – Prearrival Info
- Situational Awareness - Ongoing Updates
- Response Intel - Verified and Validated
- Response Logistics
- Enhanced Apprehension Potential
Yamaha Burglary – Real Case Study

- Call Received by Alarm Company (Unknown time)
- Alarm Company notifies Emergency Communications Center (ECC) (0320 hrs.)
- ECC dispatched to police as general nonspecific alarm – no additional information provided (0327 hrs.)
- Police arrive and find no vehicles on premise with front door glass shattered (0332 hrs.)
- Video on premise hard drive storage only – not transmitted/streamed to Alarm Company
- Owner arrives on premise and officers view video from back office - officer realizes...
- While responding, she passed the white car and pick up with trailer not realizing it was the suspects leaving the burglary scene
- Suspect vehicles freely leave area southbound on Interstate 83 to Baltimore
- Motorcycles never recovered, no one arrested, and burglary never solved

Yamaha Burglary – 9 motorcycles removed in 00:02:50
Yamaha Burglary – Replay
with standards-based protocols

• Call Received by Alarm Company (Unknown time)
• Alarm Company notifies ECC of active video verified burglary (High score: Threat to Property) (0320 hrs.)
• ECC dispatches alarm to police with standards-based protocols by 0321 hrs.
• Advising of the white car and pickup pulling a trailer involved and leaving scene.
• While responding, police officer passes the white car and pick up with trailer observed at the scene and leaving by the alarm company.
• Officer does a U-turn, requests backup for a felony stop of suspect vehicles.
• Additional officers respond to scene and physically verify business entry and thefts.
• Motorcycles all recovered, perpetrators arrested, and burglary solved.
• Alarm company, ECC, and police officers working together in a collaborative partnership!

Jay English
Background in Brief
Audible Alarm, perimeter sensor tripped, pawn store

- Dispatched Standard Code-2 call, two units.
- Time was some time after midnight.
- Secondary unit arrives at same time as primary.
- On arrival ECC advised units on scene and will be checking the front door and advise the address appears to be a gun store, not a pawn store.
- Before the officers get very far from their cars, dispatch advises to stand by.
- The ECC has re-contacted the alarm company who confirms this is a gun store, and that this gun store also deals in high-powered weapons.
- The ECC has now received information from the alarm company that it appears to be an interior trip, not an exterior trip. Almost immediately, the ECC advises officers that they are now being told that there are multiple interior trips and that they are to stand by and “do not approach”.
- As the officers are standing by, dispatch initiates the alert tones (we referred to them as the hot tones) and sounds three loud beeps on the radio.
- They then advise the entire sector that 4-Adam 81 and 4-Adam 83 are on scene of a gun store burglary in progress, and that the alarm company is indicating that the suspects have breached the inner perimeter of the high-powered, and semi-automatic weapons vault, and the alarm company is stating there is also a ceiling sensor “trip”, and the suspects may be in the ceiling of the multi-unit shopping center the gun store is located in.
- We are ordered to quad off the entire shopping center and wait for additional units.

High Risk Pawn Store Burglary

- This is just an example of how a standardize approach to alarms will help the alarm companies ask the right questions, and make the right determination as to what type of call and situation they are relaying to ECCs.
- Also, how ECCs can do the same in asking the right questions of the alarm companies, based on this standardized, prioritized approach being proposed by the working group.
- Standardization, uniform interrogation based on it, and a clear understating of what the priority levels mean, on both sides of this equation, will result in better information to responders, hopefully BEFORE they arrive on scene, and will enhance both situational awareness and officer safety.
Problem to be Solved

- There is not a Standard on how the myriad of Alarm Companies across the nation provide information to the Emergency Communication Centers (ECCs) regarding alarm information and severity of alarms received.
- An alarm is not just an alarm. It has many intricacies and complexities, which can mean life or death to occupants and to responding officers.
- Standard protocols that can be implemented to provide timely information to responding officers is ESSENTIAL!
- Standards that can be trained and implemented in alarm company central stations and ECCs and police academies across the country are critical!
- Public Safety is in need of this, and has been, for many, many years.
- We have the opportunity to create a new paradigm and public-private PARTNERSHIP!
TMA-AVS-01 Scoring Standards Committee

Nicola C. Tidy, RPL, ENP
Communication consultant

As a former ECC/PSAP Director
20 years volunteering as a firefighter/EMT
Major contributor to APCO standards, chairing various standards development committees as well as being a trained occupational and process facilitator.

If you are severely injured, care at a Level I trauma center lowers the risk of death by 25%
Improving Car Crash Outcomes

Advanced Automatic Collision Notification (AACN)

- Vehicle Emergency Data Set (VEDS)
- Primary data elements:
  - Delta V (maximum change in velocity)
  - Principal direction of force (PDOF)
  - Seatbelt usage (potential ejection)
  - Crash with multiple impacts
  - Rollover status
  - Vehicle type / description / location

Using Data to Effect Response

AACN provides foundation for decision schemes:

- Computer aided dispatch (CAD) incident type code
- Incident location / responder agencies
- Quantity and types of first responder resources to dispatch (basic / advanced life support, heavy rescue, air ambulance, etc.)
- Local and regional field triage protocols
- Hospital transport destination (trauma center vs. non-trauma center)
Predicting Injury Severity

A decade of data from National Automotive Sampling System Crashworthiness Data System (NASS CDS) used to create and validate the Injury Severity Prediction algorithm.

Examples:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Data</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>Delta V</td>
<td>12 MPH</td>
<td>Delta V</td>
<td>35 MPH</td>
</tr>
<tr>
<td>Seatbelts</td>
<td>In Use</td>
<td>Seatbelts</td>
<td>Not in use</td>
</tr>
<tr>
<td>Multiple Impacts</td>
<td>NO</td>
<td>Multiple Impacts</td>
<td>YES</td>
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<tr>
<td>Rollover</td>
<td>NO</td>
<td>Rollover</td>
<td>YES</td>
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<tr>
<td>Injury Severity</td>
<td>NORMAL</td>
<td>Injury Severity</td>
<td>HIGH</td>
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</table>
AACN to PSAP Workflow (Today)

- Upon crash, vehicle initiates a wireless call to the TSP, transmits VEDS data
- TSP assesses the situation, predicts injury severity, notifies 911 by phone
- TSP operator verbally transmits select data to the 911 calltaker
- 911 continues caller interrogation, uses CAD to dispatch responders

AACN to PSAP Workflow (Next Generation 911)

- Upon crash, vehicle initiates a wireless call to the TSP, transmits VEDS data
- TSP assesses the situation, predicts injury severity, notifies 911 electronically
- VEDS data is automatically shared with 911 (potentially bypassing the TSP)
- 911 continues caller interrogation, uses CAD to dispatch responders
- VEDS data is shared electronically with responders
Alarm Industry Opportunity

- Use predictive analytics to establish, validate, and constantly improve a scoring model for alarm data

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Data</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>Temp Sensor</td>
<td>140° F</td>
<td>Temp Sensor</td>
<td>76° F</td>
</tr>
<tr>
<td>Video</td>
<td>Fire visible</td>
<td>Video</td>
<td>Nothing seen</td>
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<tr>
<td>Multiple Alarms</td>
<td>3 interior</td>
<td>Multiple Alarms</td>
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<tr>
<td>Location</td>
<td>Commercial</td>
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<tr>
<td>Status</td>
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<td>Status</td>
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ASAP to PSAP Workflow (Next Generation 911)

- Upon alarm activation, alarm data is transmitted to alarm monitoring center
- Alarm company verifies alarm, notifies 911 electronically using ASAP-to-PSAP
- Alarm data with high priority verification score is automatically entered into CAD and responders are dispatched with high priority
- Alarm data affecting verification score is shared electronically w/ responders
Q&A and Next Call

September 10th 2020 – Kickoff Meeting

• September 17th, 4:30PM Est/1:30PM Pst
• Deep Dive into TMA/PPVAR Scoring Overview Whitepaper
• Review working draft document for standard
• Discuss upcoming schedules/calls and initial tasks/assignments