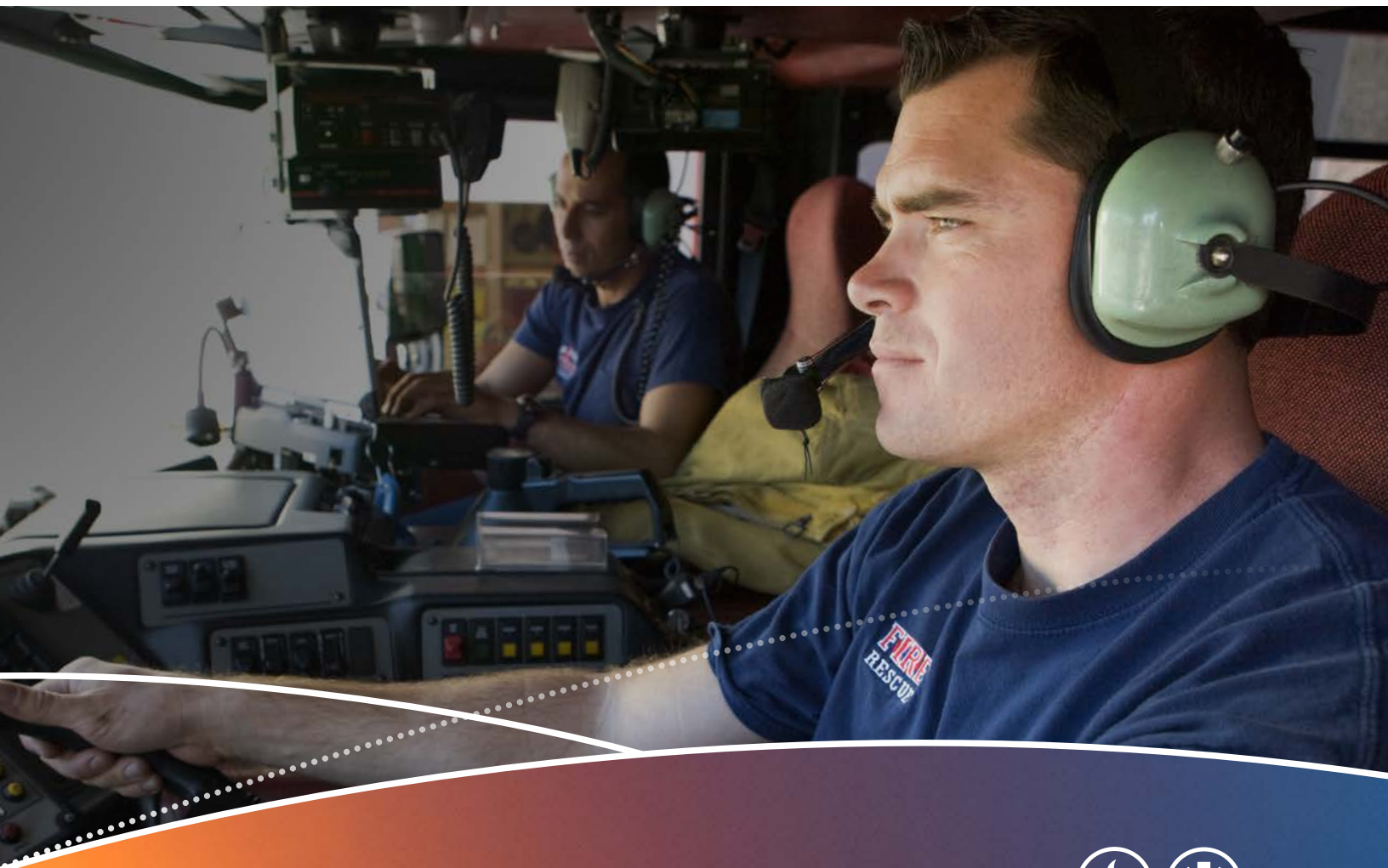




# Data Drives the Fire Service, but Humans are in the Driver's Seat

Written by Tom Louis, Emergency Reporting Business Development Analyst



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# The Value of Data

Does the thought of data collecting, analyzing, reporting, and making decisions based on high quality information seem daunting? Enough to make your head spin? If so, then you're in good company. It means you care about your organization in the best possible way. Chances are you also realize that your most important asset – your people – are key to genuine success in the realm of data management.

In early 2017, Chief Alan V. Brunacini accepted Emergency Reporting's request to speak at our inaugural National Training Academy in Bellingham, Washington. As we chatted about what a self-proclaimed non-techie fire chief should talk about at a software company's national event, I thought about what he did best – understand human nature and care about his firefighters.

So, we came up with the following working title: *Data Drives the Fire Service, but Humans are in the Driver's Seat*. It comes as no surprise that Chief Brunacini's keynote address was compelling and held everyone's rapt attention. We will be forever grateful for his contribution. To honor him, I'd like to expand on some of his ideas and provoke what I hope will be some introspection on how you value data in your organization.

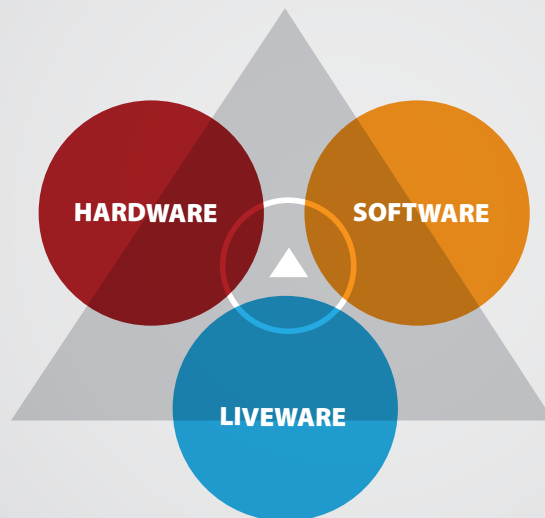


Chief Brunacini & Tom Louis  
at ER's 2017 National  
Training Academy

# Is Data an Organizational Value?

We can all agree that 99.99% of us didn't join the fire service to be data managers, yet as we promote through the ranks, we discover data management consumes most of our time. Planning daily staffing, incident reporting and reviewing, and documenting training are just a few of the data points we touch daily. The big question is, does your organization (bottom to top) truly value data management?

Chief Brunacini described the following three components as essential to data in the fire service: hardware (the stuff), software (the systems), liveware (humans). Just like the fire triangle has three elements (fuel, oxygen, heat), let's introduce another three-part system critical to running an effective fire organization: The Fire Data Triangle.



Each side of this triangle is fundamental to the success of any data management plan for a Fire/EMS organization. Take one side away, or more specifically, if one side is missing or significantly lacking, you may not be meeting your agency's potential for using data to tell your story. You may also be hurting your chances to make effective decisions in a competitive budget environment. First, here's a breakdown of our new tripartite friend.

# Plugged In

Let's talk desktop computers, monitors, wi-fi routers, tablets; you know, the stuff that gets plugged in. While this side of the triangle isn't nearly as costly as purchasing fire apparatus, it too should have a vetting process to ensure limited funds are spent wisely. Some hardware considerations:

- Are the devices fully-functioning?
- Are they available when and where they are needed by the users?
- Is a maintenance plan in place and followed?
- Are cybersecurity measures in place?

Some agencies are fortunate enough to have an IT division to take care of all of this. Many others have to do it on their own by relying on internal experts or contracting services. Regardless of how you manage your hardware, do your best to give it the attention it needs.

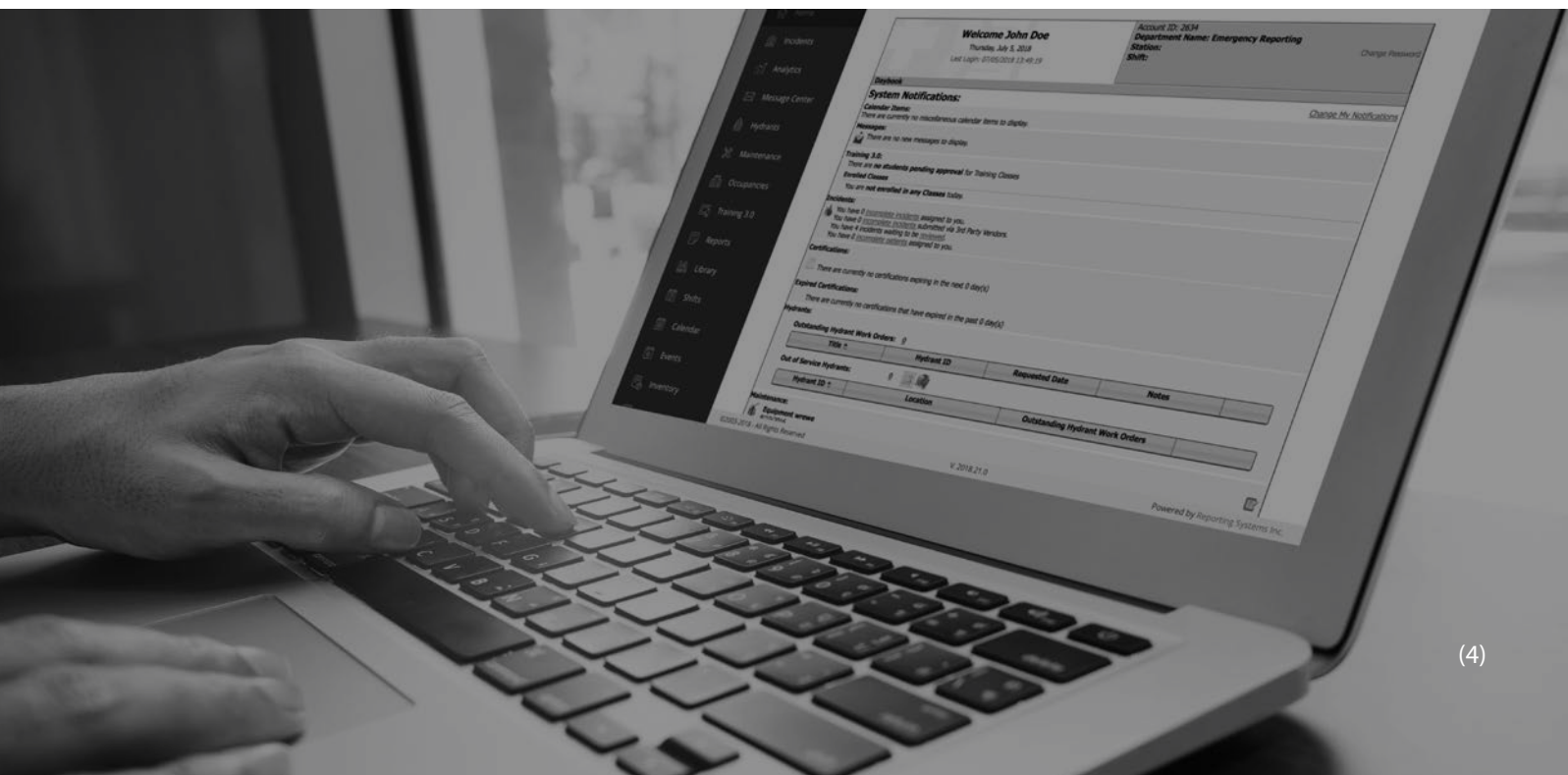


# Up and Running

Software: Billions of mysterious (to us non-developers) lines of code that add magic to our daily routines and give us computer operating systems, our favorites apps, apparatus control modules, and even make up part of our SCBAs. When it comes to data management, software is another critical purchase.

You must have a reliable, secure, easy-to-use records management system to collect the countless data points inherent with running a public safety organization. Our Buyer's Guide addresses the essentials for purchasing an RMS. Here are a few things to consider:

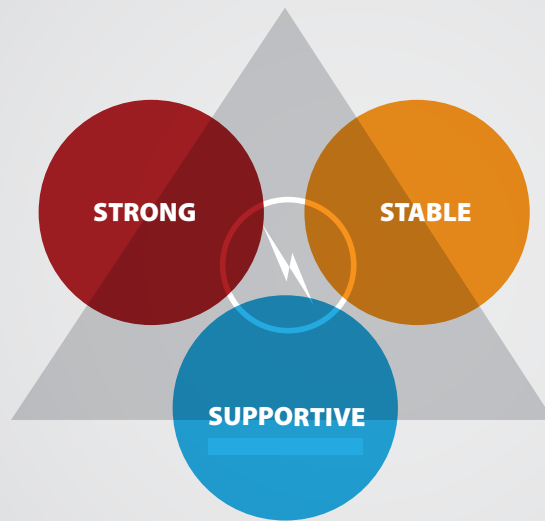
- Is it reliable? Uptime greater than 99%?
- How secure will my data be?
- What do I need to manage on my end?
  - Servers? Ugh, no thanks.
  - Software updates? We know how much fun it is to update our computer's OS, right? Not.
  - Do I need an army of IT professionals just to keep it running? Please say no.
- How hard is it to learn to use effectively? Better not require a computer science degree.



# Hands on the Keyboard

Two down, one to go. We're at the most important and arguably the most difficult element of our three-sided friend to manage: The liveware. Chief Brunacini taught us that it's people that make data management a deeply held organizational value.

All the hardware and software need people (especially the non-techies) that understand why we collect, analyze, and report quality data to make effective organizational decisions. Communicating the whys may be harder than dealing with hardware and software. The good news is that it's really not that difficult – it's about eliminating the disconnect between what goes in versus the information that comes out.



Defining high quality data with a bottom-up approach will help you succeed in inculcating the whys behind data management. Ensuring you've got a strong and stable Fire Data Triangle will mean the difference between working with technology like C-3PO or dealing with the T-1000 from The Terminator.

I don't know about you, but I would rather have a stable partner "fluent in over 6 million forms of communication" than one programmed to hunt me down, make my life miserable, and be the nuisance that tells me, "I'll be back."

# Down and Dirty: 6 for Verity

To help propel our conversation into better understanding the whys behind good data, I'd like to share six elements that define quality data. I'll keep it short and sweet. Below are one or two sentences to explain the concept coupled with a real-world fire service example:

1.

## Completeness

Is the dataset comprehensive? Are all of the required elements there?  
Does the software help the liveware?

*Example* – Are all of the required fields for NFIRS or NEMSIS present? Are there indicators to ensure the report writer can't complete the report without entering those fields?

*Why?* – Federal grants are tied to submitting complete reports.

2.

## Accuracy

Does the data reflect reality? Who/what defines accuracy in your agency?  
Who's checking accuracy?

*Example* – Think incident narratives...If it isn't written down, it didn't happen.

*Why?* – Continuity of patient care, public records requests, subpoenas.

3.

## Consistency

"Like" elements are consistent across the system. Quality control.  
Is everyone on the same page?

*Example* – Do your company officers document an SOG drill the same way, or are they using different training codes for the same drills?

*Why?* – Consistent, quality data entry that requires little to no modification to report recurring events (training, incidents, events).

4.

## Validity

Does the data element capture, measure, or track what it's supposed to? Can you trust the output?

*Example* – Are your crews entering the correct NFIRS codes for incidents? Are they using NFIRS Incident Type code 100 for a house fire when they should be using 111?

*Why?* – Both the field name and what goes into it are critical. Those putting data in need to understand expectations. Otherwise, we'll take the path of least resistance (often the wrong path) when completing our work.

5.

## Availability

Is the system up and running when needed, either to put data in or pull information out? Is it backed up?

*Example* – Does your software provider have a service level agreement (SLA) that defines uptime expectations, pathways for gaining support, and timelines for addressing requests for help?

*Why?* – Just like Mrs. Smith needs us when she's having a bad day, when we need to contact the "9-1-1" for our data management tools – we need them to be there for us.

6.

## Timeliness

How long from the time of the event until it's entered in the system? Is the data up to date? When will it be needed? Can the system deliver it on time?

*Example* – NFIRS data needs to be submitted for July 2018 during the first week of August, but some incidents from July are still not completed.

*Why?* – Often, reporting requirements and decision-making are time sensitive. Ensuring clarity of expectations as to when data needs to be entered is part of addressing the whys.



There you have it; six elements that define data quality: completeness, accuracy, consistency, validity, availability, and timeliness.

These are ideal jump-in points when creating buy-in from the people in your organization regarding data entry, data analysis, and data reporting. Experience has shown me that just providing a glimpse behind why we do things in the fire service generally creates greater buy-in and sense of ownership. No one likes to hear we're doing something just "because I said so."

And lest we forget: All of the following examples depend on getting good data in, so you can get trustworthy, actionable information out:

- Successfully improving your ISO score
- Becoming and maintaining accreditation status with CFAI/CPSE
- Seeking local, state, and federal grants
- Justifying your need for money, manning, and machines



## Putting It into Action

Now that we've introduced the Fire Data Triangle and discussed six elements of data quality, I'd like to share one last thought. I call it my Bottom Up Theory.

Simply expressed, when you train, educate, and explain the whys behind data management to those actually entering the data, you increase your chance of producing spectacular information coming out that leads to safe, well-funded fire departments.

As a bonus you also get happy leadership teams making effective decisions. These decisions help keep their crews and communities safe by continuing to secure the money, manning, and machinery needed to run a first-rate Fire/EMS organization.

## Tom's Bottom Up Theory





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### About the Author

Tom Louis retired as a battalion chief from the Green Valley Fire District in Arizona in 2013 after serving for 22 years. He has used Emergency Reporting since 2004 and has been part of the Emergency Reporting family since 2011, teaching throughout the United States and around the world. In addition to serving as a company officer, paramedic, and public information officer, he holds two associate degrees and graduated summa cum laude from Arizona State University with a bachelor of applied science degree in Fire Service Management. He currently serves as Emergency Reporting's Business Development Analyst. During down time he is an avid reader and enjoys spending time with his daughters. He occasionally obsesses about classic and modern Mopar muscle cars and has a soft spot for retired racing greyhounds.

### About Emergency Reporting

Emergency Reporting (ER) offers a powerful, cloud-based records management software (RMS) solution to Fire/EMS agencies worldwide. Founded in 2003, ER empowers first responders with secure, easy-to-use station management tools that offer one-report filing of NFIRS and NEMSIS data. ER's affordable SaaS solution allows Fire/EMS departments to run their entire operations efficiently and effectively, enhancing both firefighter and citizen safety. ER is proud to support more than 379,000 first responders at thousands of civilian Fire/Rescue and EMS agencies and DoD/military installations, as well as large entities with self-contained Fire/EMS services such as NASA, nuclear power plants, hospitals, and oil refineries.

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