



WHITE PAPER

# A GUIDE TO LONG-TERM SUCCESS IN EARNED VALUE MANAGEMENT

Looking beyond EVM myths to  
find a process that is scalable  
and people-centric





# PART 1 WHAT EVM IS—AND HOW TO CREATE AN APPROACH THAT FITS YOUR PROJECT

## A GUIDE TO LONG-TERM SUCCESS IN EARNED VALUE MANAGEMENT

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### INTRODUCTION

## WHAT IS EARNED VALUE MANAGEMENT?

What feelings does the phrase “Earned Value Management” conjure up for you? Frustration and overwhelm? Confusion? Those emotions are unfortunately all too common; Earned Value Management (EVM) has often been vilified as a cumbersome, time-consuming and annoying list of tasks that need to be checked off.

Many myths surround EVM, most of which add an air of negativity to the approach. But when executed correctly, EVM is a valuable tool for all stakeholders—one that provides game-changing insight into real-world project issues and challenges.

EVM doesn’t have to be a convoluted process that you force yourself through simply because it’s a requirement. In fact, with the right mindset and understanding, you can experience long-term success with EVM—and even come to appreciate and enjoy the process.

# EARNED VALUE MANAGEMENT

## A DEFINITION

One of the most common challenges to successfully implementing EVM at an organization is that many people simply don't know what EVM is. One common myth is that EVM is the software you use and that implementing certain tools means you're "doing EVM." Purchasing and using software can be a part of EVM, but it's certainly not the full picture. Success in EVM starts with a clear, simple definition:

*Earned Value Management is a project management technique for measuring performance and progress in an objective manner. It combines scope, time and costs, providing insight into variances and the progress of each. It allows project managers to see where they've been, where they are and where they're going.*

## ADDRESSING A FEW EVM MYTHS

Much of the confusion and frustration surrounding EVM comes from a few myths that have persisted over the years, mostly due to a misunderstanding of what the process entails and what EVM can actually "do."

### 01

**Myth:**  
**EVM = software.**

Using the right software is certainly part of EVM, but it's not the entire process. In addition to implementing the right software, EVM includes new processes, tasks and mindsets.

### 02

**Myth:**  
**It's too expensive**

That software mentioned above can indeed be costly to implement upfront, but the long-term value-add more than makes up for it, especially in terms of time saved and boosted project success rates.

### 03

**Myth:**  
**It's too rigid.**

The persistence of this myth might be due to EVM industry professionals themselves. It's true that many projects required to use EVM have a number of strict regulations. However, teams new to EVM are sometimes just not used to having tighter project controls, and more experience tends to soften feelings about the process.

### 04

**Myth:**  
**Using EVM means your project will be perfect.**

Ultimately, projects still involve human beings and a multitude of factors. EVM doesn't guarantee a perfectly executed project; there will still be delays and overruns in many cases. Discipline and consistency are required.



**“EVM MAY INDEED HAVE GOTTEN TOO COMPLEX IN RECENT YEARS. AS PROJECT PROFESSIONALS, WE NEED TO GET BACK TO OUR ROOTS, REMEMBERING WHO OUR TRUE ‘CUSTOMERS’ ARE: PROJECT MANAGERS, NOT THE REVIEWERS/AUDITORS. AUDITS AND REVIEWS ARE IMPORTANT, BUT EVM IS ULTIMATELY INTENDED TO MAKE THE LIVES OF PROJECT TEAMS EASIER.”**

**PATRICIA MAST,**  
PRINCIPAL CONSULTANT AT MRC

**Understanding what EVM is—and isn’t—lays the foundation for success in your projects over the long term.** If your organization is considering implementing EVM, you have likely had several projects go off course, without understanding why. By using EVM, you’ll be able to understand almost any challenge that comes up. You can compare progress against cost, and understand the driving factors behind variances. (And if you need support in getting EVM going, the Manta Ray Consulting team is here to help; EVM is a second language for us!)

Now that we have a stronger base of understanding, let’s dive into the ins and outs of the EVM process and how you can position your projects for success. We’ll cover unique team roles, how to scale for different projects, the tools and training you will need, and how to report and prepare for audits and reviews.



## **TEAM ROLES: A BRIEF WHO’S WHO**

One reason EVM often gets positioned as “too expensive” is that the process calls for a few unique roles. Hiring someone with specialized knowledge for these positions can require additional budget that your projects didn’t previously have allocated. However, filling these roles doesn’t have to break the bank. In some cases, hybrid roles are an option, as is training for team members already in the mix. Additionally, working with a consultancy like Manta Ray can provide the knowledge and experience base you need without having to go through a recruitment and hiring process.

The good news is that team roles for an EVM project and a traditional project are similar. Organizational hierarchy is quite alike, with project directors down to technicians/team members executing project tasks. Project controls and project management roles still apply here, though people in project controls roles will benefit from having EVM-specific knowledge.



“CAMs HAVE A BIT OF A HYBRID POSITION, AS THEY ARE OFTEN BOTH TECHNICAL LEAD AND MANAGER IN TERMS OF ADMIN. THEY NEED TO UNDERSTAND HOW TO CONTROL A PROJECT. IT’S A TOUGH JOB AND CAN BE A PATH TO HIGHER MANAGEMENT IN A LAB.”

THOM BAUMANN-NEYLON,  
PROJECT CONTROLS SCHEDULER AT MRC



CREATING AN EVM APPROACH  
THAT FITS YOUR PROJECT

Among the specialized roles often utilized in EVM:



### COST ACCOUNT MANAGERS (CAM)

As the name suggests, CAMs are focused on the finances and budgets of a project. They need both technical skills and people skills and are responsible for the scope of a project. In some cases, especially on smaller projects, the project manager may also be the CAM.



### SCHEDULERS

This role encompasses a number of pieces, including managing needed software, monitoring costs and timelines, and understanding the work and time involved for each task in a project. In many cases, it’s most desirable for the person in this role to have knowledge of both time and cost planning, as well as risk analysis.



### EARNED VALUE ANALYSTS

This role marries the responsibilities of a CAM and scheduler. Earned value analysts often serve as a liaison, working between the funding organization and project team.

Not every project team will have all of these positions, and some small teams may make it work without any specialized EVM roles. It is possible to leverage—and scale—EVM for different organizations and needs.

“ON EVERY PROJECT, YOU NEED TO MEASURE HOW MUCH YOU’VE ACCOMPLISHED. YOU NEED TO TRACK TASKS. WHETHER YOU HAVE 1,000 TASKS OR 10,000 TASKS, THE SAME TOOLS AND PHILOSOPHIES APPLY.”

KERRY MINOR,  
PROJECT MANAGEMENT  
CONSULTANT AT MRC

When most people hear the term **Earned Value Management**, their mind goes immediately to **government work**.

Major government-funded projects<sup>1</sup> were indeed the initial catalyst for EVM, which grew out of the U.S. Navy’s use of the Program Evaluation and Review Technique (PERT). EVM is a perfect fit for projects that must be completed within tight regulations and that are beholden to regular reviews from funding organizations.

However, if your organization is smaller or outside the government world, don’t write EVM off just yet. Risk exists on every project, and a team leveraging EVM is well-positioned to understand and navigate risk analysis. Even large projects vary in workload—one may be heavy in labor where one may be heavy in procurement, for example—and will need an EVM approach to be scalable. Even in a rigorous environment, there is room for adaptability. Certain labs and government departments have their own, specifically created approaches, decks and reports that still fit within the confines of EVM. If you’re curious about EVM and asking yourself whether it’s a good fit for your project, in most cases, the answer is yes.

1. Gholi, Mike. “[Earned Value Management Training: A Management Modality on the Rise.](#)” Academia.edu, May 6, 2018.

## PART 2 IMPLEMENTING EVM

### SOFTWARE AND TRAINING: TOOLS OF THE EVM TRADE

You might consider implementing EVM as encompassing three key areas: people, process and proper tools. People should always be at the center of what we do; thriving team members mean a thriving project and an environment that fosters innovation and creativity. Your team is the driving factor in whether your process and tools will be successful and useful.

#### IS EVM LITE THE FUTURE?

Is EVM truly scalable for any project? It's a fair question. There are constantly new requirements, and the process can feel very constraining. Ultimately, a lot of the rigor is more beneficial to the audit teams and people who certify EVM systems than to project teams. Even if you're interested in EVM and feel it could benefit your team, you may end up going in a different direction due to concerns your smaller project won't be a fit. But we believe there's a way forward.

We believe that EVM Lite is not only a possibility—the groundwork is already in place to start implementing it. According to James Forman:

**“IMPLEMENTING PROJECT EVM DOESN'T HAVE TO BE A COSTLY DECISION ANY LONGER. FOR MANY PROJECTS, EVM CAN BE IMPLEMENTED USING ONLY A SPREADSHEET AND A RESOURCE-LOADED SCHEDULE.”**

Patricia Mast, principal consultant at MRC and an advocate for EVM Lite, has identified a few high-level points of what this could look like:

Removing certification requirements on certain projects.

Cutting out non-essentials like change control for certain projects.

Reducing the level of documentation (all some projects need is a change control log).

Slashing nonessential paperwork and updates.

## PEOPLE

### Stakeholder Alignment

Step one in implementing EVM for your project is getting stakeholders on board. For those new to EVM, the previously discussed myths are likely present. To help bring clarity, find and showcase projects that utilize EVM and mirror your organization as closely as possible (size, type of work, etc.). Next, consider the management style of leadership in the organization and how EVM already fits with it. How can you re-frame the process to fit the language and mindset your team already has? Get a good handle on the regulations you must follow and the paperwork and processes you can cut out. Lastly, hold regular check-ins throughout the process for team members to ask questions and voice concerns.

## TRAINING

Training is also vital to your team's long-term success in EVM. There will be new terms, new tools, new mindsets and more that everyone will need to understand. Training should include a few areas:

- Training on how **individual roles** will change.
- Training in **new software and/or new ways** of using previous software.
- Training on **terminology of, reasoning for and benefits of EVM**; a comprehensive EVM course is recommended for all stakeholders.
- Training in **reporting and EVM metrics**. One individual metric can show if a project is behind.

Ideally, at least part of this training should be happening well before project launch. There is some benefit to learning on the ground, but make sure your team is set up for success. The middle of a delay-causing project crisis is not the time to learn what metrics matter most!

Beyond the actual mechanics, it is vital that the project team and stakeholders understand the why of EVM. The answer can't be “because that's what we do” or “because the government requires it,” either. All team members need an understanding of the benefits and why the shift is being made. This is also important for new team members joining an organization already using EVM. Change can be uncomfortable, and moving to a completely new way of managing projects can feel frustrating. Take time to consider team members' very real human feelings and reactions, and provide space to work through challenges collectively.

**“HAVING A SYSTEMS ENGINEERING BACKGROUND IS HELPFUL IN EVM, BUT IT'S NOT REQUIRED. ANYONE FROM ANY BACKGROUND CAN LEARN THIS. WHAT'S NEEDED IS APTITUDE; UNDERSTANDING HOW PROJECT MANAGEMENT WORKS.”**

**PATRICIA MAST,**  
PRINCIPAL  
CONSULTANT  
AT MRC





## PROPER TOOLS

EVM leverages a variety of tools, a number of which you likely already have in place. At the most basic, you'll need a good handle on Microsoft Excel. You'll want tools that fit the categories of cost, scheduling and reporting.

### COST

The project controls and CAM roles will be heavy users of these tools. Examples include custom Excel setups, Deltek Cobra and The Hammer Solutions.

### SCHEDULING

Schedulers and Earned Value Analysts will most often use these applications; project managers will need some knowledge as well. Examples include: Primavera, Deltek Open Plan, Microsoft Project, Smartsheet and custom Excel.

### REPORTING

Many roles will take advantage of reporting tools. Examples include: The Hammer Solutions, Excel and Power BI.

**“GOOD TRAINING IS REQUIRED. A COMBO OF GOOD TRAINING AND MESSY DOCUMENTATION CAN STILL WORK, BUT NOT VICE VERSA.”**

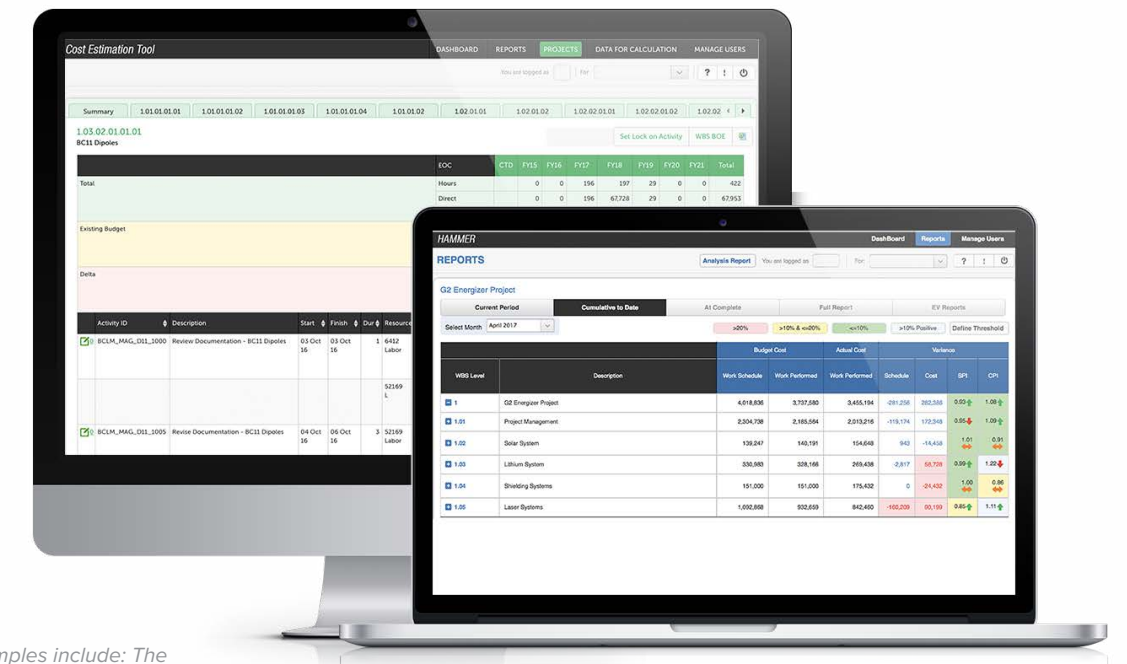
**SALLY WINE,  
SENIOR PROJECT  
MANAGER AT MRC**

## PROCESS

Much of the EVM process will feel familiar to traditional project management models, with a few changes. Start by taking a look at current processes and consider how to optimize them. Having a maturity model is helpful. Some questions to ask:

- Do we need to create new or additional documentation?
- How do new roles affect our current processes?
- What parts of the process might create roadblocks?

Your processes must be repeatable in order to be successful. Repeatable processes streamline and remove blockers and make onboarding of new team members and projects much easier.



Reporting tool examples include: The Hammer Solutions, Excel and Power BI.



## PART 3

# POST-IMPLEMENTATION CONSIDERATIONS

Reporting, audits and reviews offers unique challenges, especially when it comes to adding context to the information for senior leaders and enabling the transparency required for audits and reviews.

## REPORTING: HOW TO ADD CONTEXT<sup>2</sup>

For someone not out there doing EVM work every day, a lot of data points, information and terminology might read like a foreign language. Where you may see a strong, exciting report, the executive you report to may see a jumble of numbers. They may not see the work your team has been putting in, the challenges you've worked through, and the nuances that affect every single data point. And without that context, data can be interpreted to say whatever you—or anyone else—wants it to.

When reporting time comes, you can present your progress and successes in a way that resonates and showcases the best of your team while being honest and transparent. Adding context to your EVM reports can also make your presentations more efficient, cutting down on basic questions and leaving more time for the important discussions. Consider these tips when planning your next report presentation:

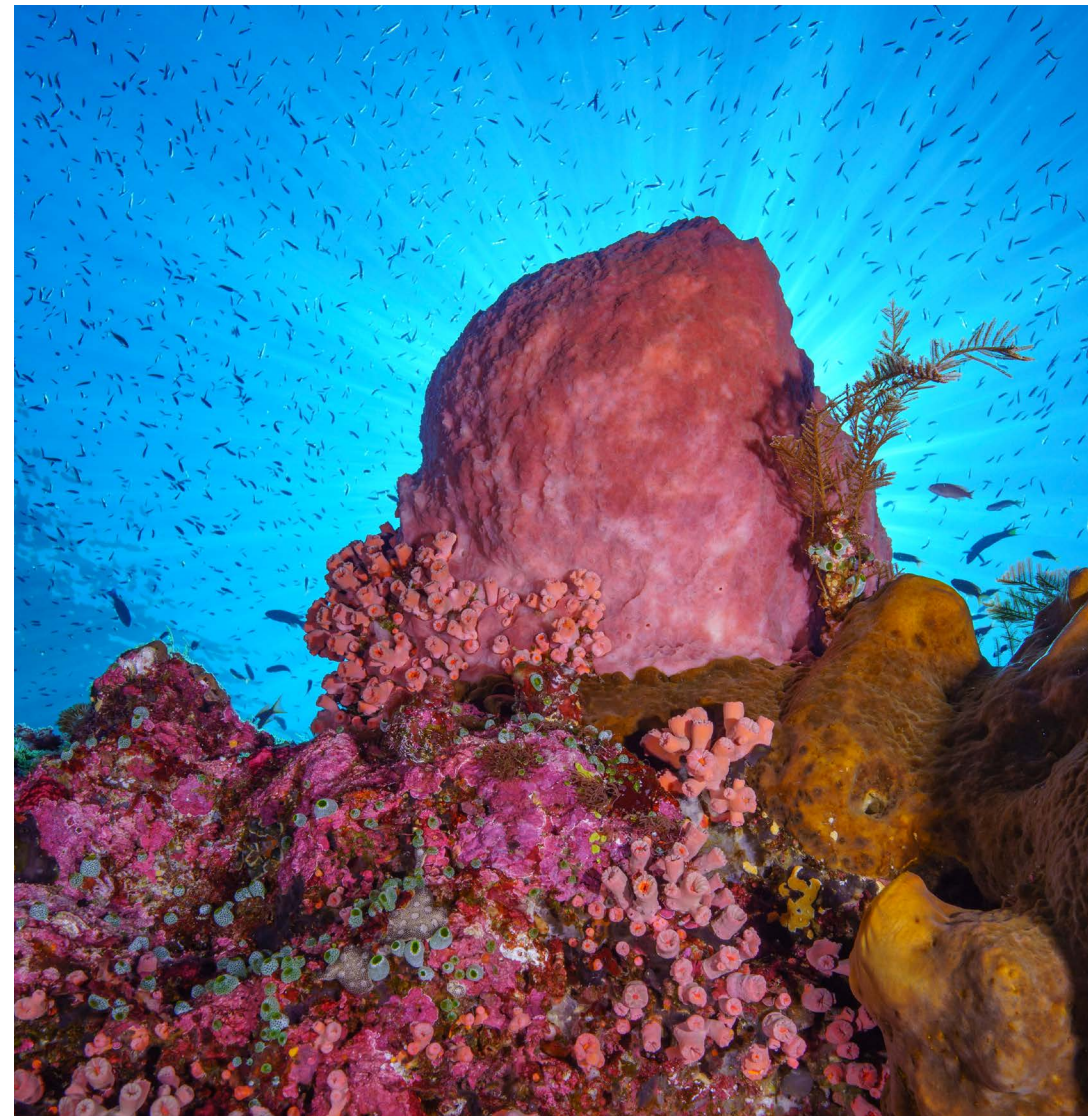
### Don't assume your audience's knowledge base

Assuming that your audience knows and understands certain intricacies about the EVM process can doom your presentation from the start. By not delving into important definitions or background information, you may leave out vital context, and this can cause your audience to draw incorrect conclusions about your data. However, don't default to using precious presentation minutes breaking down basic concepts, either.

You'll also want to make sure all stakeholders are included in metrics training. They don't need to be experts, but they should be able to understand what the numbers mean. Remember that a project director may have understanding of numbers, and they aren't necessarily concerned with individual items. Focus on how the numbers impact the entire project.

## Continue monitoring your deployment and update reports when needed

Reporting isn't a one and done situation. You'll need to keep an eye on how the deployment is going for your project, and update reports as needed. If something is off track, needs to change, or is ahead of schedule, make sure to add the reasoning into your report to provide context on the situation. One of the major benefits of EVM is the ability to see the little nuances that can tip the scales. When you share the final reports after the project has wrapped, being able to discuss why changes were made and how they were made can provide learnings for the entire team.



## REQUIRED REPORTS FOR EVM PROJECTS

There are standard reports that are required for an EVM project. These include:

- **CPR Formats 1-5**
- **BCWS-BCWP-ACWP (SPA) report**
- **FTE Reports**
- **Estimate-To-Complete (ETC) reports**
- **VARs**
- **EACs**

Projects may develop custom reports that address specific project needs. Tools such as Power BI and Excel are often used to develop these custom reports.

## Consider your visuals

Data, when illustrated, can often be understood more easily. Data in visual form is also much easier to present than a spreadsheet, since you can highlight the nuances. Colors and formatting can provide important context clues. You can see curves and dips when using a line graph and see percentages more easily when they're presented in a pie chart. These visuals give you the opportunity to add important context to the events that caused it. Perhaps a dip in productivity coincides with a major tropical storm in your area, or an increase in productivity aligns with your team being given an unexpected bonus on their paychecks. Numbers can tell you a lot, but without context they can leave out the people behind them.

Reports are a key part of audits and reviews, which you'll likely experience in an EVM project.

<sup>2</sup> Portions of this section first appeared in a [blog on Manta Ray Consulting's site](#).



## AUDITS AND REVIEWS: HOW TO PREPARE

When it comes to reviews, transparency is the number one goal. Mistakes are inevitable—a project team is made of humans, and mistakes provide opportunities to learn. Although they can feel overwhelming, reviews and transparency don't have to be scary.

Preparation for reviews and audits should be a regular part of the EVM process, rather than a scattered, frenzied process a few weeks out—ideally, preparation should begin three to six months in advance. We recommend focusing on the following areas:

### PROJECT HISTORY

Gather, research and study all of the project's history. Even members who have been on the project since the beginning need refreshers from time to time, and going back to the start can provide valuable insight into how the project is going today. Traceability is key.

Keeping an eye on these areas on a daily basis will also help shine a light on potential issues that may come up in an audit.

### ACCOUNTING & DOCUMENTED EVIDENCE

Work with CAMs to understand the numbers and finances, and thoroughly document variances and causes, down to the penny. Make sure you have the knowledge to answer questions during the review.

### TEAM CHECK-INS & TRAINING

Make sure all team members are getting the support they need. Training refreshes every six months can be helpful in keeping everyone on track.

### Identifying problems in advance

One sign you're not prepared for a review? Your team doesn't have any flaws or issues to discuss. If you don't see any problems at all with the project, it's time to ask what you're overlooking. The goal is not to have zero flaws or hide them from reviewers. Instead, you should focus on being honest about issues and on having a handle on causes well before the review itself.

Auditors will likely find something no matter how well prepared a project team is. The key is to ensure that the issues they find are minor infringements and not showstoppers. In your daily, weekly and monthly processes, insert space for doing mini-audits of yourself, your team and the project. Update documentation and trace back any metrics that seem off. You may find that there isn't a problem, or you may find a small red flag you need to address. Either way, you'll have proof to show the reviewers that you're aware and on top of it.

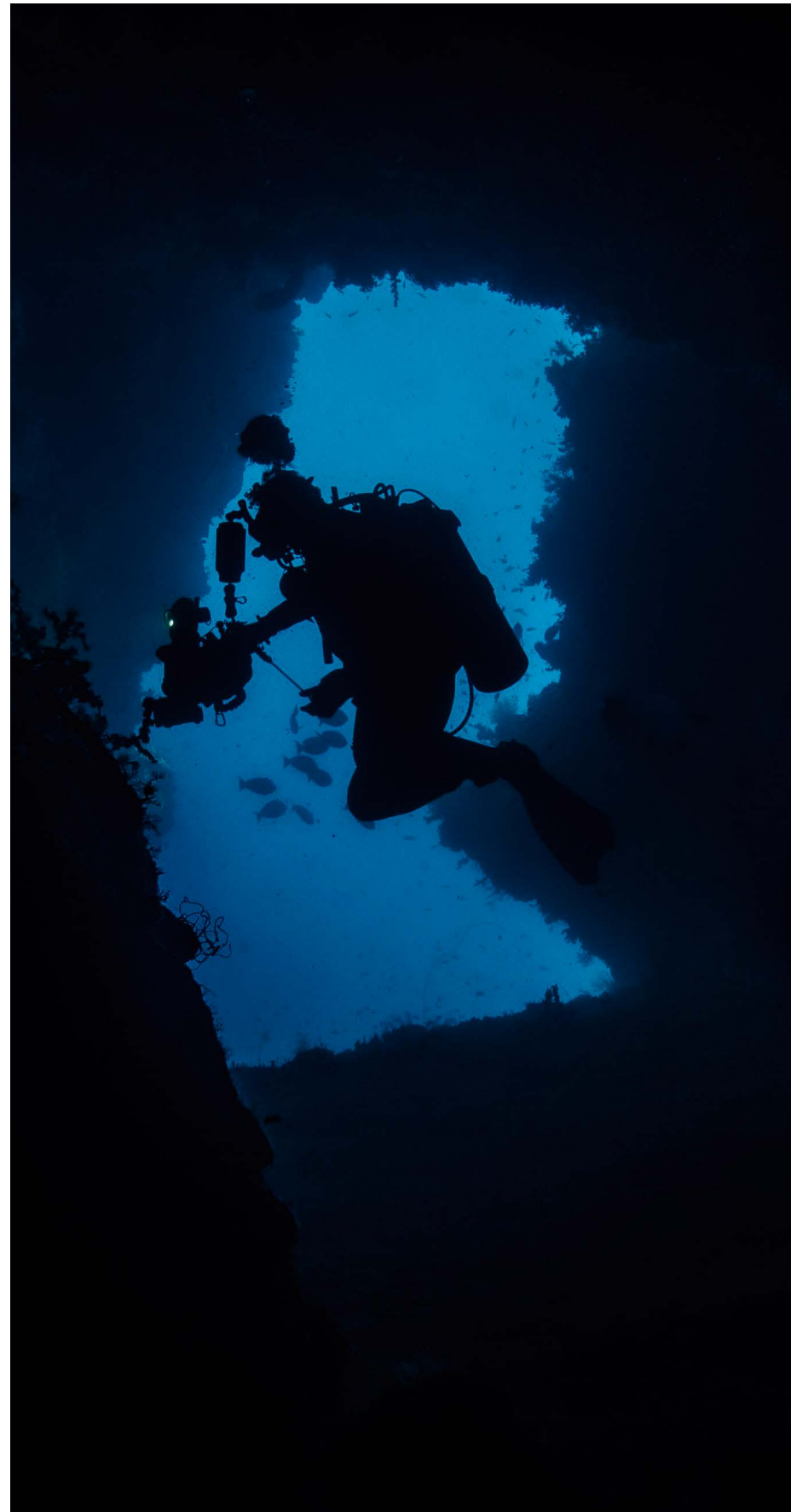
## THE STEPS OF PREPARING FOR AN AUDIT

- The project team must perform a thorough evaluation of the project data to certify.
- The project team must develop presentations that focus on the technical, cost and schedule accomplishments and issues.
- The project team must ensure that it is following the process outlined in the Project Execution Plan as well as the laboratory EVM system description.
- The project must ensure that all stakeholders are fully trained on EVM.
- The project must go through an internal dry run audit
- The project must make an offering to the EVM gods, with prayers for a successful audit. (OK, this one might be optional.)



### Practice, practice, practice

Like many things in life, preparation for an audit involves practice. Do dry-runs, conduct internal audits of individual team members and discuss any points of confusion. Identify any areas team members don't feel comfortable providing answers about, and work on rectifying that. Is more training needed? Keep in mind that in most cases, auditors are reasonable people. Stay flexible, and practice as much as possible.



## CONCLUSION

### EVM DOESN'T HAVE TO BE A BURDEN

At MRC, we fully believe that EVM's benefits far outweigh any challenges. There are a number of myths and misconceptions about EVM that have led to its reputation as something of a headache. Yet, when you look beyond those myths, you'll find a process that is scalable, repeatable and people-centric. It might take a bit of work to shift mindsets at the beginning, but once you have all stakeholders in the loop, long-term success in EVM is possible. Projects and teams alike will benefit.

LEARN HOW MRC CAN HELP YOU  
MANAGE YOUR EVM PROCESS.

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