Building a Legacy: One Piece at a Time

By Laura S. Illanes

"It's not only what we do now that matters; it's the path we've established for the next generation that will be our legacy," states Darnell Mack, an electrical engineer and project manager with Facilities Operations and Maintenance (FOM), a division of the Facilities Services Department at the University of Texas at Austin. This is her vision, but she is not alone.

DEFINING QUALITY PREVENTIVE MAINTENANCE

She is part of the Maintenance Improvement Initiative, or MI², a core strategy for FOM. What does MI² mean to the university? As Darnell explains, "By developing preventive maintenance (PM) service levels for every piece of equipment within the context of its use in a particular facility and describing exactly how to perform the PM service, we can make this information readily available to the people who maintain our facilities. We define and build quality into the work we do now—and for those who will do this important work long after we're gone. This consistency in doing things the right way, at the right time, helps ensure that the facilities entrusted to us will work better and last longer. These are our guiding principles, and our legacy."

Darnell is quick to add that when she says "our," she means everyone working on the university's facilities. "Everybody owns quality. Quality is not limited to the quality assurance experts who help us define and document our maintenance services procedures. It comes from the people who manage and perform the maintenance work every day."

CROSS-DISCIPLINE TEAMWORK

She also emphasizes that a multidiscipline, multidepartment team is involved in developing the MI² service levels and procedures. The chart below in Figure 1 provides a detailed example of how the cross-discipline team is developing the MI² initiative, which looks at both existing equipment and new equipment coming online. The team documents tasks for each component of each type of equipment maintained, in each context (where it is located). Take for example a review of an HVAC control valve at the Student Activity Center (SAC).

CONSISTENCY IS KEY

For equipment already online, Darnell and her colleagues have found that either no documentation on service protocols exist, or if any do exist, they must be rewritten. They know that consistency is impossible to attain without proper documentation accessible on the work order and inventory management system (facilities asset management information system (FAMIS)) used by facilities staff.

For new equipment (in new or existing facilities), the team works to document the protocols and procedures for the equipment to ensure that maintenance can begin as soon as the new building comes online. The flow chart in Figure 2 shows how the team transfers the equipment information into the FAMIS CMMS system.

Whether the equipment is already in place or about to be installed, the outcome of this review process improves or

Figure 1: Maintenance Improvement Initiative team example.

Who is on the team	What the team does
• Engineers • HVAC mechanics • Instrumentation & controls technicians	Define the PM task list to verify operation and calibration of the valve. For example, the team documents the steps that will complete the task correctly and without impact to occupants.
• Darnell Mack, Project Manager • Planner/schedulers • QA/process improvement staff • FAMIS Administrator	Input the defined PM task list into FAMIS so that it is assigned every year to the relevant crew.

instills efficiency and sets the standard for quality; efficiency and quality are the cornerstones of the MI² initiative.

DATA QUANTIFY RESOURCES

The vastness and complexity of this initiative becomes clear when extrapolated to more than 80,000 unique pieces of equipment the team must review. Plus, some tasks take longer than others to perform, which is why the time involved to perform each task is another piece of information that must be loaded into the work-order system. The team uses a formula that translates tasks into the number of hours required to carry out the task, as shown below:

Time to perform task × pieces of equipment × frequency = technician hours required

For example, it takes about a half-hour to perform the PM on an exhaust fan. Facilities technicians are responsible for maintaining over 1,000 exhaust fans for the university. (Source: FAMIS work order and inventory management system.) Proper maintenance for the fans requires that PM be completed at a frequency of three times per year. The calculation reveals that 1,500 hours per year should be allotted for this one component:

.50 × 1,000 × 3 = 1,500 hours per year

The above equation illustrates how data gained from the initiative helps the team to quantify the resources needed to carry out the university's facilities maintenance mission—especially its most important resource: people.

Loading better information *into* FAMIS with help from the FAMIS administrator and database technicians helps the team get better information out of the system, as jobs are completed. Data from the system helps facilities stewards see how well they are doing. For instance, how much time should it take to complete a particular PM for this particular piece of equipment at this particular site? If it takes this much time to complete the tasks we should do, can we get this work completed with the resources we have available? If we don't have adequate resources, then what task are we NOT completing? What are the implications of not completing certain tasks?

Darnell and her MI² team hope to provide the answers to these and other maintenance performance questions. As Darnell emphasizes, "Our goal is to do more than keep the buildings running right now. This university has been around for over 100 years. With some help from the stewards of today, it will be around for another 100 years or more for the stewards of tomorrow."

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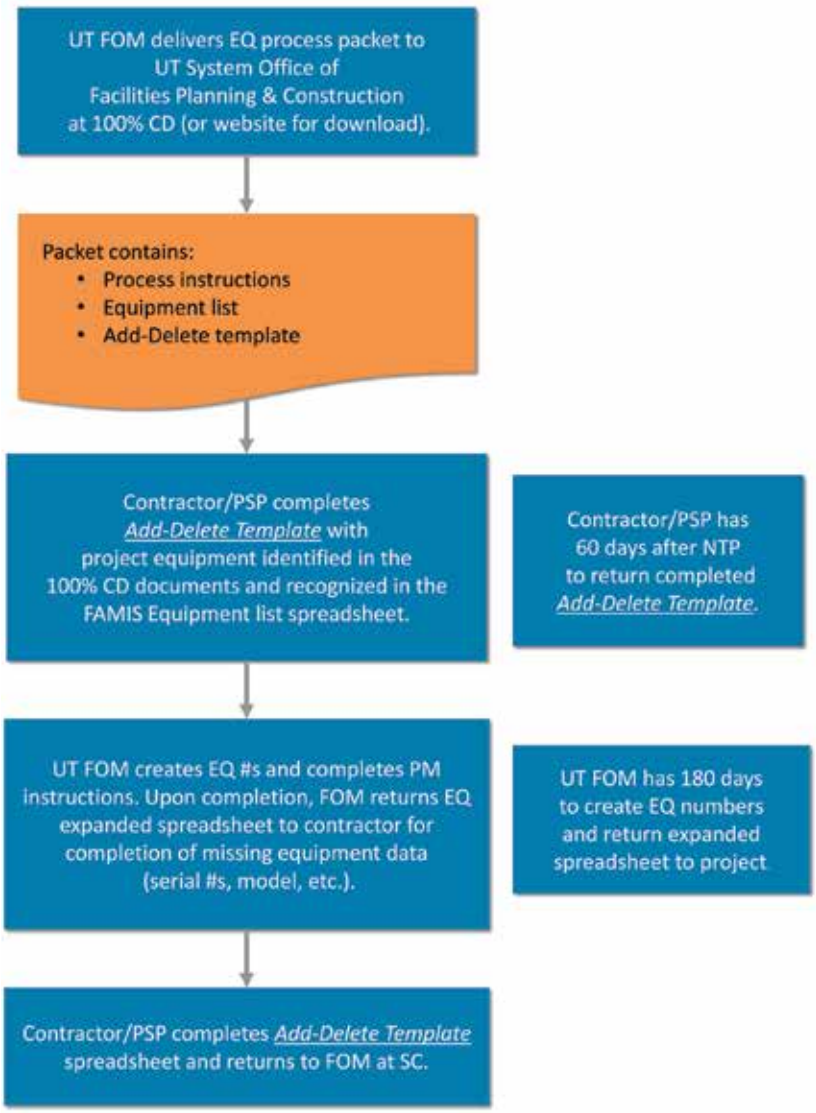
Figure 2: Process for transfer of equipment information into FAMIS.



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