FSETA Qualification and Training Metric (FQTM)

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REVISION HITORY

Rev	Date	Who	Description of Amendments
1.0	8 Sep 2015	Matthew Heron	Initial Release

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LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS

CMP	Compliance Monitoring Program
EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration
FOM	FSTD Operation and Maintenance
FQTM	FSETA Qualification and Training Metric
FQTM RESULT	The results of data on a FQTM Plot
FSETA	Flight Simulation Engineer and Technician Association Inc.
FSTD	Flight Simulator Training Device
FSTD Operationally Critical Tasks	FSETA Defined list of tasks critical to the operation of qualified FSTD's. Refer to **Section 1.15 of the FSETA Membership and Accreditation** document.
INITIAL	Initial FSETA Technical Accreditation
LEVEL 5 DE	FSETA Technical Accreditation Level 5 DE(Direct Entry)
NAA	National Aviation Authorities
OEM	Other Equipment Manufacturers
OPERATOR	Any operator of qualified FSTD's. Could be referred to as an Approved Training Organisation ATO, FSTD Operator or Sponsor
PROGRESSIVE	Advancements in FSETA Technical Accreditation levels past the **INITIAL**
SQMS	Simulator Quality Management System

FSETA Qualification and Training Metric (FQTM)

1. Introduction

Metrics were introduced to assist both operators and National Aviation Authorities (NAAs) to keep a closer watch on an FSTD's overall performance and an operator's management of defects and downtime between periodic evaluations. Current metrics are primarily focused on the device but two areas of the maintenance operation that now have valuable metrics available are an FSETA recommendation for inclusion. These two areas are:

- Technical qualifications of flight simulation maintenance personnel, and
- Validity of technical training programs used to establish qualifications

Technical industries like aircraft avionics have established feeder programs due to NAAs' licensing requirements that enable gaps left by retiring or resigning colleagues to be filled by qualified personnel. The flight simulation maintenance industry does not and this has led to a situation where qualified technical personnel who depart are not being replaced by those similarly trained or technically qualified to maintain qualified FSTD's. After almost two decades of stagnation, a technical qualification void hidden behind Job Titles and Job Descriptions is emerging in flight simulation maintenance that may not be fully comprehended by FSTD operators or NAAs without metric data.

The FSETA, a not-for-profit Association, having practical experience in issuing flight simulation maintenance industry qualifications globally, is witnessing this trend through document submissions. The lack of FSTD operator-issued training certificates combined with minimal and vague FSTD or OEM training certificates is a serious concern. To the FSETA, this indicates a substantial decline in technical training standards. In some cases, the nonexistent demonstration of learning and competency for new entrants, working on qualified FSTD's, is becoming a standard practice.

To provide statistical data of the issue, the FSETA has developed an FSETA Qualification and Training Metric (FQTM) as a self-regulatory measure for FSTD operators to present during an SQMS or CMP external audit. Early voluntary adopters of the FQTM, no matter the initial FQTM result reported internally or to the NAAs, will demonstrate forward thinking and the expected transparency in SQMS and CMP reporting.

Initially, the FQTM should be monitored and reported on an annual basis until proven qualification advancement through valid technical training, is demonstrated and maintained. Once metrics demonstrate qualification advancement over concurrent reporting periods, an operator should revert to reviewing the metrics every two years and at least three months prior to an SQMS or CMP external audit.

The recommendation for annual initial reporting is to encourage an industry-wide culture change toward technical qualifications and training of new entrants in flight simulation maintenance. Without high initial levels of reporting, Technical Managers will not be able to justify increased training budgets to Accountable Managers and the NAAs will have delayed visibility of the qualification void appearing within FSTD operators. An

issue, the FSETA believes, that will affect an operator's ability to maintain FSTD reliability on a daily basis.

For some FSTD operators, waiting until reliability figures drop as evidence to incorporate the FQTM will prove too late as they will struggle to retain, recruit and/or train qualified technical personnel. This is due to the impending lack of their availability and the time lag in establishing standardised technical training programs.

Early widespread incorporation of the FQTM will allow FSTD operators and third-party trainers sufficient time to amend existing technical training programs to ensure valid Certificates of Training are being issued. At that time, new entrants who start in flight simulation maintenance should have access to standardised technical training. Only then will the industry establish, through self-regulation, technical training programs equivalent to other professional aviation industry groups.

The earlier FSTD operators adopt and NAAs recommend the FQTM, the smoother the transition to higher technical training standards. FSTD operators, who establish the FQTM prior to the FSETA Grandfather Rights closing date (30th June, 2017), will be significantly advantaged. Technical personnel holding substandard certificates of Training, Presence or Attendance, etc. will be unable to use those documents toward their own qualification or the FQTM, after this deadline.

The Grandfather Rights period was a recommendation supported by EASA and the FAA, as well as several other NAAs visited during the FSETA establishment period. At this time, the FSETA initiative and Technical Accreditation platform were presented. Major FSTD vendors based in North America and Europe were also consulted during the same period and were equally supportive of the measure.

The FSETA Technical Accreditation, a professional global qualification, brings self-regulation for standardised qualifications and a benchmark for new entrant technical training in flight simulation maintenance. The FQTM will ensure all FSTD operators and technical maintenance personnel are aware of the minimum levels of technical training and qualifications required to perform the expected tasks and roles within this industry. This can only be achieved through formal qualifications obtained through standardised technical training programs. Both of these can now be statistically demonstrated and monitored through the FSETA Qualification and Training Metric.

2. The FQTM

The FQTM is a statistical representation of the **initial** and **progressive** FSETA Technical Accreditation qualification against a defined FQTM **Baseline**.

The **initial** FSETA Technical Accreditation plotted on a graph determines the first statistical measurement of the FQTM against the **Baseline**. This is an independent evaluation by the FSETA of all documented industry experience, academic history and simulation technical training received. This data is available in the FSETA Technical Logbook and available to FSTD operators as part of a Group Membership Report. The Group Membership Report is available online to FSTD operators who sponsor the FSETA Technical Accreditation of their technical maintenance personnel.

The **progressive** FSETA Technical Accreditation is the ongoing status of an individual FSETA Technical Accreditation after more industry experience and valid technical training is received. Industry experience and technical training is validated by the FSETA and entered into an individual's FSETA Technical Logbook. Periodic updates of this progression, measured against the FQTM Baseline, demonstrate the validity of technical training and industry experience received by the individual and used toward the FSETA Technical Accreditation.

FQTM NOTES:

1. Technical training that does not issue valid Certificates of Training will not be accepted for FSETA Technical Accreditation progression. Continued delivery of this type of technical training **will negatively impact the FQTM Result over time**.

2. FSTD Operation and Maintenance (FOM) experience is verified and updated by the FSETA within an individual's FSETA Technical Logbook. Failure to ensure logbook currency **will negatively impact the FQTM results over time**.

3. Technical personnel holding substandard certificates of Training, Presence or Attendance, etc. will be unable to use those documents toward their own FSETA Technical Accreditation qualification or the FQTM, after the 30th June, 2017 Grandfather Rights closing date. **This will negatively impact an individual's FSETA Technical Accreditation and future employers FQTM results**.
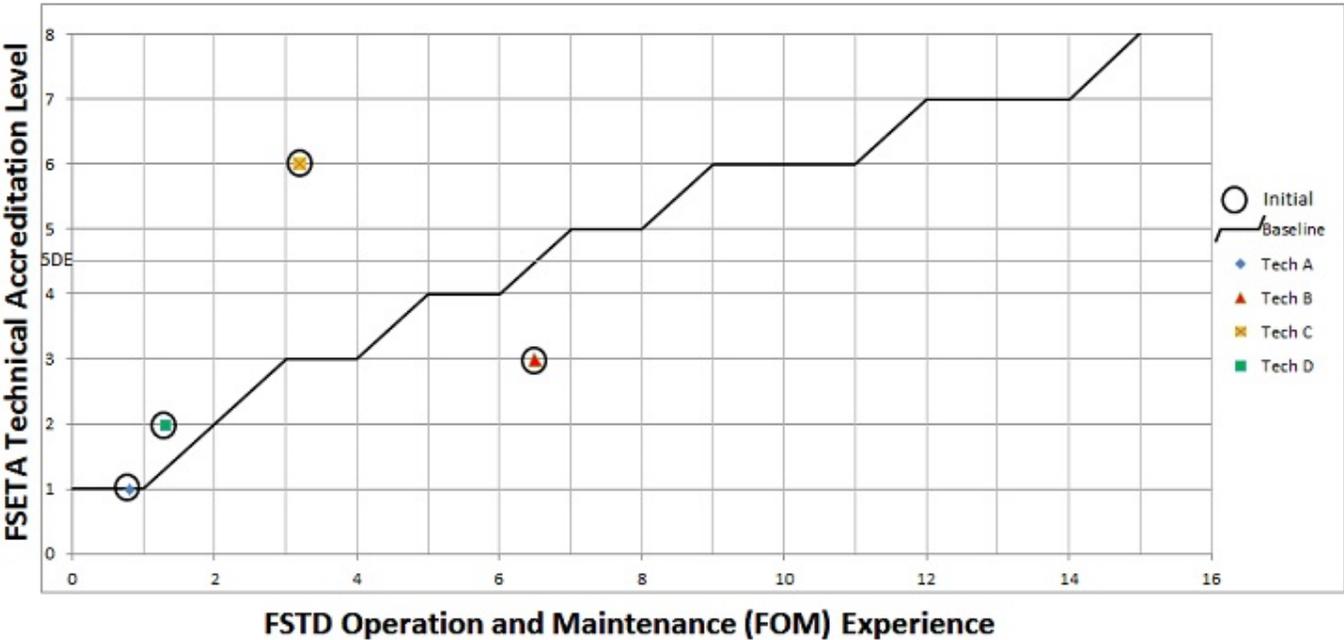
3. The FQTM Plot

Figure 1: Qualification and Training Metric (FQTM) Plot

4. The FQTM Plot Explained

- **'X-Axis' (horizontal)**: **FSTD Operation and Maintenance (FOM) Experience**
  This is validated by the FSETA and documented within an individual's FSETA Technical Logbook. This value accumulates as long as the individual is employed in an FOM environment. Time spent in other technical fields relevant to flight simulation maintenance may also be considered during an Initial FSETA Technical Accreditation however those leaving the industry will see a suspension in the FOM. Periods spent outside the FOM during a career will not count toward the initial or progressive calculation.

- **'Y-Axis' (vertical)**: **FSETA Technical accreditation Level**
  This is awarded by the FSETA and documented within an individual's FSETA Technical Logbook. Progression in these levels are awarded upon FSETA receipt of valid certificates of training combined with specified minimum amounts of time spent gaining industry experience at each level and within the FOM environment.

  Progression to **Level 6** is considered, by the FSETA, to be the minimum Level of qualification to perform the majority of **FSTD Operationally Critical Tasks** and as such, is the **FQTM Result Target**. Progression above Level 6 to Levels 7 or 8 are for those seeking technical management roles.

- ○ **Initial**:
  The initial FSETA Technical Accreditation awarded by the FSETA and documented within an individual's FSETA Technical Logbook.

- ╱ **Baseline**:
  This is the stepped black line from Level 1 to Level 8. New entrants (typically trainees) with little or no industry experience, working on qualified FSTD's, should track this line exactly or just above it to the FQTM Result Target of Level 6.

- **Baseline Track:**
  This describes an individual who tracks a similar progression as the **Baseline** over concurrent reporting periods. The **Baseline Track** can be either above or below the **Baseline**. Individuals who were initially accredited below the **Baseline** but follow a **Baseline Track** in concurrent reporting periods are considered to be receiving valid technical training to work on qualified FSTD's.

- **Below the Baseline:**
  Individuals initially accredited below the **Baseline or** who fall below the **Baseline** over time may be behind in valid technical training to achieve the **FQTM Result Target** of Level 6.

- **5 DE**: **FSETA Technical Accreditation Level 5 DE (Direct Entry)**
  Individuals entering the industry with full University or College technical Degrees of three years or more (Diplomas, Associate Diplomas, MBA's, MSc or Certificates, etc. are not eligible) and having little documented industry experience may enter between Level 4 and Level 5 at Level 5 DE. Individuals entering at Level 5 DE and working on qualified FSTD's, should remain above the **Baseline** or follow a **Baseline Track** to Level 6 over concurrent reporting periods.

5. FQTM Results – Qualified FSTD's

There are four result categories identified by the FQTM Plot for the qualifications of technical personnel working on qualified FSTD's:

- **FQTM Result - Target Reached**
- **FQTM Result - On Target**
- **FQTM Result - Requires Attention**
- **FQTM Result - Requires Immediate Attention**

Examples of each FQTM Result are detailed below:

5.1 FQTM Result – Target Reached

All technical personnel employed to work on qualified FSTD's are at Level 6 or above.
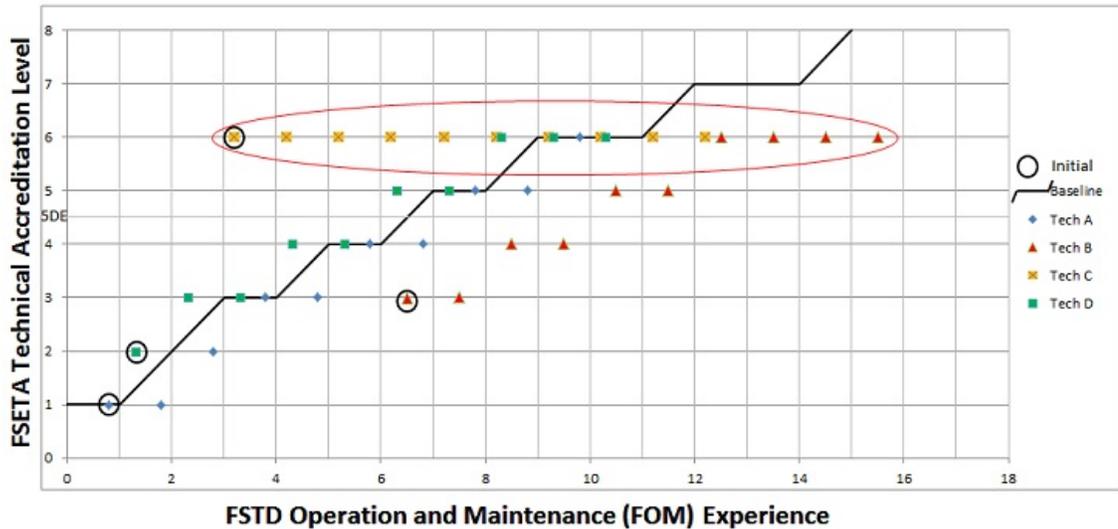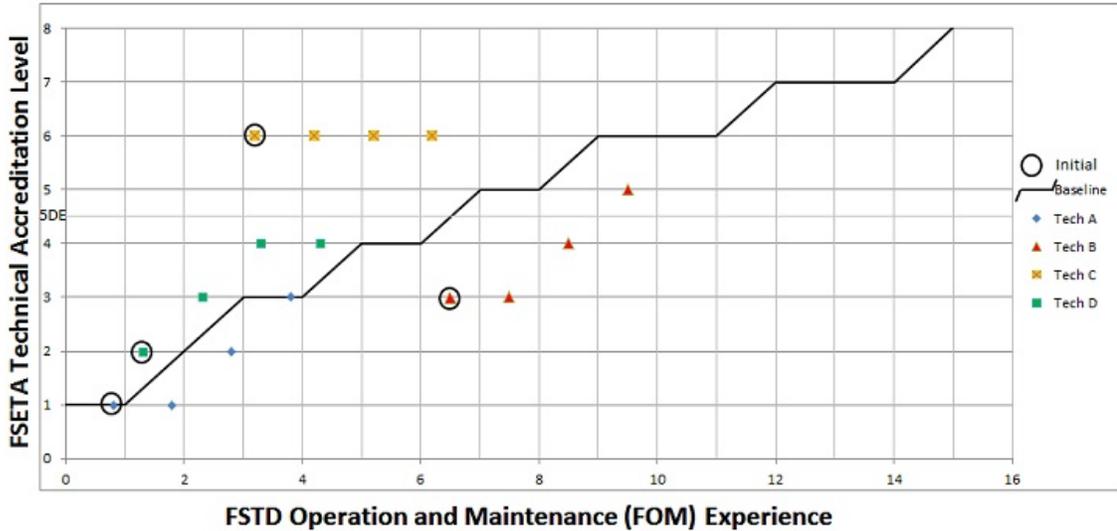

Figure 2: Qualification and Training Metric (FQTM) Plot – Target Reached

This plot result will be typical of operators who have a structured technical training program in place that issues valid Certificates of Training, covering the FSETA Areas of Training, as a minimum.

This result highlights that suitable technical personnel training programs were available and delivered to those working on qualified FSTD's.

5.2 FQTM Result – On Target

All technical personnel, employed to work on qualified FSTD's, are on or above the **Baseline** or on a **Baseline Track**, over concurrent reporting periods, to achieve Level 6.

Figure 3: Qualification and Training Metric (FQTM) Plot – On Target

This plot result will be typical of operators who have a structured technical training program in place that issues valid Certificates of Training, covering the FSETA Areas of Training, as a minimum.

This result highlights that suitable technical personnel training programs are available and being delivered to those working on qualified FSTD's.

5.2 FQTM Result – Requires Attention

One or more technical personnel, employed to work on qualified FSTD's, who were initially accredited below the **Baseline** or fall below the **Baseline** and fail to establish a **Baseline Track,** over concurrent reporting periods, to achieve Level 6.
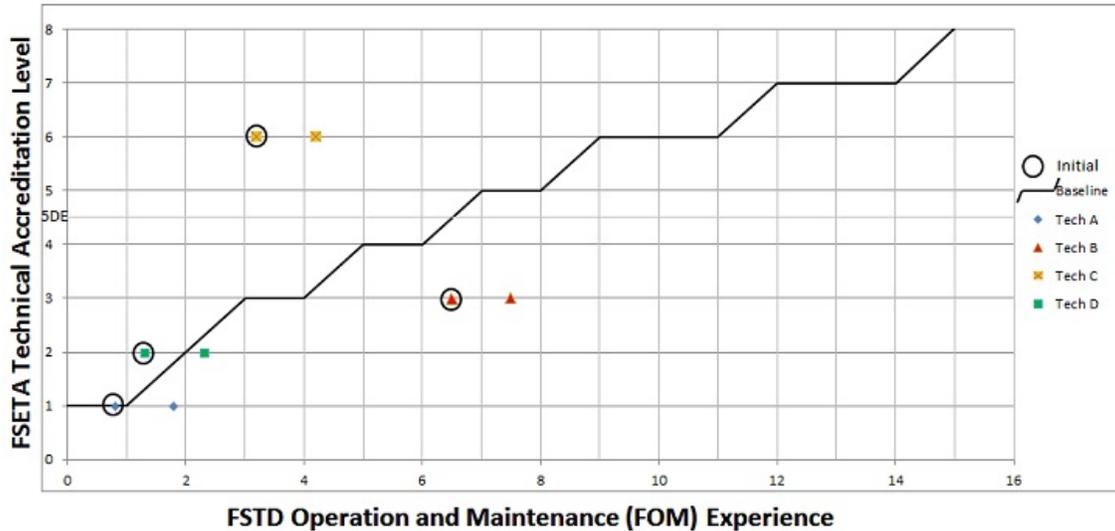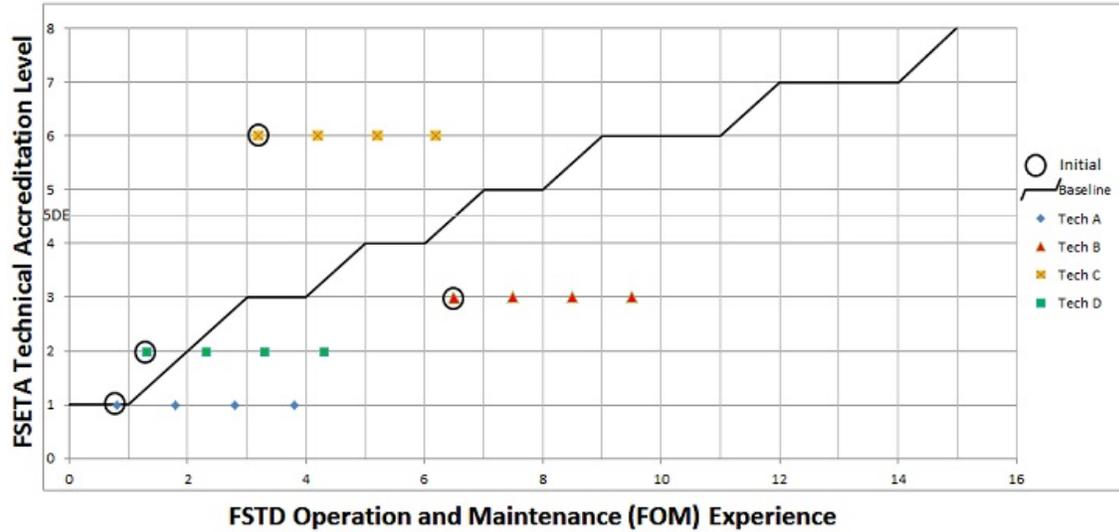

Figure 4: Qualification and Training Metric (FQTM) Plot – Requires Attention

This plot will be typical of operators who do not have a structured technical training program in place that issues valid Certificates of Training, covering the FSETA Areas of Training, as a minimum.

This result highlights the need for attention at the individual/team level, in reviewing existing technical training programs, for those working on qualified FSTD's.

5.3 FQTM Result – Requires Immediate Attention

One or more technical personnel, employed to work on qualified FSTD's, who falls below the **Baseline** and fails to follow a **Baseline Track,** over multiple reporting periods, to achieve Level 6.

Figure 5: Qualification and Training Metric (FQTM) Plot – High Risk

This plot result will be typical of operators who do not have a structured technical training program in place that issues valid Certificates of Training, covering the FSETA Areas of Training, as a minimum.

This result highlights the need for immediate attention at the individual/team level, in reviewing existing technical training programs, for those working on qualified FSTD's.

6. FQTM Results – Non-Qualified FSTD's

In principle, the four FQTM Results identified in Section 5.1 to 5.3 are the same for Operators of FSTD's not requiring civilian regulatory evaluations.

For Military FSTD operators adopting the FQTM, this demonstrates to FSTD Sponsors that suitable technical personnel training programs are available and being delivered to those working on FSTD's to support their long-term operational needs.