

Bylaws of the MMPDS (Metallic Materials Properties Development and Standardization) General Coordination Committee

Revision D

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Acronyms

ASG	Airframer Steering Group
ETTG	Emerging Technology Task Group
FTG	Fastener Task Group
GCC	General Coordination Committee
GSG	Government Steering Group
GTG	Guidelines Task Group
ISG	Industry Steering Group
MATSSG	Material and Technical Services Steering Group
MIL-HDBK-5	Metallic Materials and Elements for Aerospace Vehicle Structures
MMPDS	Metallic Materials Properties Development and Standardization (Handbook)
MTG	Materials Task Group
OEM	Original Equipment Manufacturer
PSG	Propulsion Steering Group

Introduction

These bylaws define the operating procedures for the MMPDS General Coordination Committee (GCC) and its associated steering, working and task groups, and secretariat. It is a "living document" that will change, as operating procedures are refined, and more effective procedures are generated. This document and any future changes to it must have GSG and ISG approval.

Background

The *Metallic Materials Properties Development and Standardization* (MMPDS) Handbook represents a continuation of and replacement for the military handbook entitled *Metallic Materials and Elements for Aerospace Vehicle Structures* (MIL-HDBK-5). MMPDS is the primary source within the United States and many other countries of statistically based material and fastened joint design allowables accepted for meeting aircraft certification and continued airworthiness requirements. It holds this distinction because of its rigorous standards for mechanical property data collection, analysis, review, and approval. The Handbook also contains extensive information and data for other material properties and design requirements, such as fracture toughness, fatigue, creep strength, rupture strength, fatigue-crack propagation rate, and resistance to stress corrosion cracking.

MMPDS is an accepted source for metallic material and fastener system allowables. Volume I contains design data for conventional material product forms and joining systems. Volume II contains design data for process intensive materials and joining systems, *e.g.*, additively manufactured metals or friction stir-welded joints. Both volumes define relevant guidelines for generation and analysis of mechanical properties data for review and approval by the MMPDS General Coordination Committee for inclusion within that volume.

The MMPDS handbook and its predecessors have been in existence for over 80 years, and they have been reviewed and updated by industry and government on a consensus basis throughout that period. The Handbook was first published in 1937 as Army-Navy-Commerce Handbook 5 (ANC5). The United States Air Force (USAF) took over the primary responsibility of continuing development in 1954 and, subsequently, the name of the Handbook was changed to MIL-HDBK-5 in 1956. The Federal Aviation Administration took over the primary responsibility for the Handbook in 2002, and subsequently renamed the Handbook in 2003. Throughout this long history the Handbook has continued to incorporate new methodologies, add new material properties, and update existing ones. This continuing effort has enabled the handbook to keep up with technology development and maintain up-to-date information for materials being used by industry. The Handbook's guidelines define rigorous data generation and analysis procedures widely applied by airframe and engine companies to develop design values for metallic materials and joining systems not in the Handbook.

The MMPDS (formerly MIL-HDBK-5) GCC has held semiannual technical coordination meetings since the late 1950s. As a result of these coordination meetings the Handbook has gone through numerous major change notices and/or revisions over the years. Formal guidelines for statistical analysis and presentation of design data in the Handbook were introduced in 1969.

Major airframe original equipment manufacturers (OEM) and material supplier companies created the Industrial Steering Group (ISG) in 1997 to fund and pursue related development activities of

common interest. The ISG has expanded to include engine OEMs and airframe and engine component manufacturers. The heritage purpose of the ISG was to provide industry funding and guidance to pursue select independent projects within the framework of the MIL-HDBK-5 coordination activities. The ISG maintains a board of trustees composed of the representatives of member companies in good standing. It also operates under and maintains a set of bylaws similar to this document.

Concurrent with the formation of the ISG, the activities and responsibilities of the Government Steering Group (GSG) were increased. Since 1997 the GSG has worked closely with the ISG and together they have served as the oversight body for maintenance of the MMPDS Handbook.

Overview

A rigorous process has been established to ensure that data entered in the handbook is properly screened, analyzed, and reviewed. Decisions relating to Handbook additions, modifications, and deletions are made by the MMPDS GCC at coordination meetings held on a semi-annual basis. The MMPDS GCC is a voluntary group led by the Government Steering Group (GSG) with critical support provided by the Industry Steering Group (ISG) and the Secretariat, as shown in Figure 1.

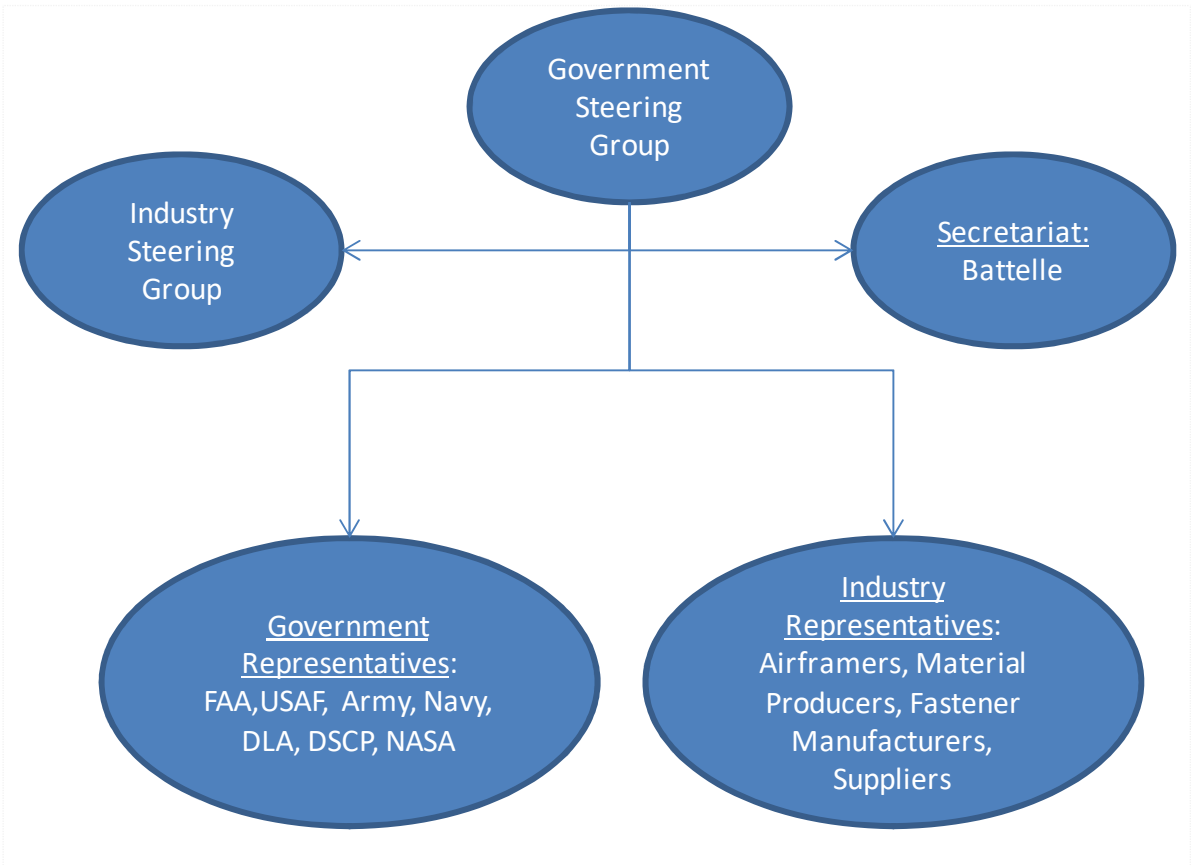


Figure 1 General Coordination Committee (GCC)

The MMPDS GCC consists of approximately 150 members from various government agencies, industry, and academia. An unbiased third party acts as the MMPDS GCC Secretariat for the planning,

facilitating, coordinating, and implementing activities necessary to develop and maintain the handbook. Data reduction, presentation of statistical and characteristic properties, and compliance with handbook requirements are all functions of the Secretariat.

The MMPDS GCC is supported by five steering groups, four task groups, and several working groups. Steering groups provide guidance and recommendations based on their own unique perspectives. Tasks groups review and approve technical results completed by the Secretariat per accepted guidelines. As of this writing, the following Steering and Task Groups meet at each Coordination Meeting:

1. Government Steering Group (GSG)
2. Industry Steering Group (ISG)
3. Airframer Steering Group (ASG)
4. Material and Technical Service Steering Group (MATSSG)
5. Propulsion Steering Group (PSG)
6. Emerging Technology Task Group (ETTG)
7. Fastener Task Group (FTG)
8. Guidelines Task Group (GTG)
9. Materials Task Group (MTG)

Working groups are organized for specific technical issues. Each working group addresses specific technical issues as tasked by a cognizant task group. There are currently four Working Groups:

1. Fatigue Working Group (FatWG)
2. Statistics Working Group
3. Volume II Working Group (V2WG)
4. Welding Working Group (WWG)

MMPDS GCC and group meetings are held twice a year, Spring and Fall. The Secretariat acts as the meeting facilitator, providing agenda, and meeting minutes. The meetings generally take 3-4 days with group meetings held in the days leading up to the MMPDS GCC meeting, which takes place on the last half-day. The meeting agenda is normally distributed by the Secretariat to attendees approximately 4 weeks prior to the meeting date and typically includes:

- A review and approval of data proposals.
- A review of status reports on ongoing data analysis and methodology development.
- A review and approval of S-, A-, and B-basis material properties for inclusion to the handbook.
- A review and approval of updates and/or modifications of guidelines and methodologies.
- An approval of changes, updates, and revisions to the Handbook.

At each MMPDS GCC meeting, the MMPDS GCC acts upon proposed changes to the document that are submitted in writing to the Secretariat before the meeting. Approved changes and other relevant documentation are captured in meeting minutes, distributed by the Secretariat to attendees approximately 4 weeks after the meeting. The meeting minutes are then recognized as approved for entry into the subsequent handbook release. In general, each revision of the Handbook contains the result of one Spring and one Fall meeting of the previous calendar year.

Article I. Organization

Section 1.01 Name

The name of this organization shall be **“METALLIC MATERIAL PROPERTIES DEVELOPMENT AND STANDARDIZATION” (MMPDS) GENERAL COORDINATION COMMITTEE (GCC).**

Section 1.02 Objective

The objective of the MMPDS GCC is to bring together participants from government and industry to form a consortium which will collaboratively,

- (1) Establish data requirements and statistical methods for deriving statistically-based static design properties for metallic materials and fastened joint system allowables;
- (2) Develop and publish static design properties for metallic materials used in aerospace application which meet MMPDS guidelines and the probability and confidence standards required by 14 CFR § 2x.613 (civil) or JSSG 2006 (military);
- (3) Document other fundamental material properties useful in design, as identified by the consortium;
- (4) Provide guidance for developing design values for process dependent metallic materials, in a revision controlled handbook.

Section 1.03 Scope of Activities

- (1) Coordinate the technical efforts of government and industrial organizations interested in developing and maintaining an up-to-date Handbook of reliable metallic materials and fastening elements design allowables database.
- (2) Provide guidance and oversight for the MMPDS Secretariat in the development of analysis methods, material property data and design element (fasteners) data common to aerospace vehicle OEM, government research and aerospace industrial supplier companies.
- (3) Provide a forum for professional interaction, problem solving and discussion of common issues among participating companies and government agencies.
- (4) Provide a network to rapidly gain member feedback on issues of concern to MMPDS GCC members.

Section 1.04 Supporting Groups and the Secretariat

There are five standing steering groups and four standing task groups that support the MMPDS GCC in meeting its objective. Additional groups may be formed as needed at the discretion of the MMPDS GCC. Steering groups provide guidance and recommendations based on their own unique perspectives. Task groups approve work performed by the Secretariat to ensure compliance with approved guidelines or to approve exceptions. The standing groups are identified below along with a brief description of their role and that of the Secretariat.

- (1) The GSG and ISG shall provide oversight of the operation of the GCC. The GSG Chair shall be a representative of the government organization managing the technical coordination contract

with the MMPDS Secretariat. A GSG Vice-Chair may be selected from representatives of GSG organizations.

- (2) The Emerging Technology, Fastener, Guidelines, and Materials Task Groups address technical issues and review the results of work completed by the Secretariat. Task groups may request development of new guidelines that must be reviewed and approved by the GTG.
- (3) The Airframer Steering Group, Material and Technical Services Steering Group, and Propulsion Steering Group provide recommendations to the GCC from the airframe manufacturers', material and technical services providers', and engine manufacturers' perspectives, respectively.
- (4) The Secretariat is an unbiased third party under contract to a member of the GSG. The Secretariat manages the core activities needed to maintain the MMPDS Handbook. The Secretariat also acts as an arbitrator and performs data assessments and required statistical analyses.

Working groups are organized to work on focused technical issues. Since these groups are formed and disbanded on an as-needed basis their number and focus is always subject to change. It is inappropriate to list them here.

Additional standing or *ad hoc* steering, task, and working groups may be formed to address long-term activities, or unique, short-term areas of interest to the GCC. New groups may be formed or existing ones dissolved with the approval of the GCC. The creation or dissolution of a steering, task or working group will be published in the meeting minutes of the meeting at which they are formed or dissolved.

Article II. Responsibilities and Membership

Section 2.01 MMPDS General Coordination Committee (GCC)

The MMPDS GCC is ultimately responsible for overall technical maintenance of the MMPDS Handbook with help from the Secretariat, direction from the steering groups and technical support from task and working groups. The GCC is responsible for all decisions associated with MMPDS Handbook changes.

MMPDS GCC membership is open to representatives of industry, academia, and government agencies interested in supporting the objective of the MMPDS GCC. The GCC is composed of individuals physically attending an MMPDS GCC meeting regardless of their GSG or ISG membership status. The list of MMPDS GCC Meeting attendees and their contact information shall be documented in the minutes of each MMPDS Coordination Meeting.

Section 2.02 Steering Groups

(a) Government Steering Group (GSG)

The GSG provides oversight and direction to the GCC from an airworthiness authority and government procuring activity perspective. The GSG works closely with the Secretariat with respect to programmatic issues including meeting logistics and funding. The GSG, in collaboration with the ISG, seeks to ensure adequate funding is available for activities performed by the Secretariat in maintaining the MMPDS Handbook. The GSG along with the ISG are responsible for maintaining the MMPDS GCC Bylaws and together have sole authority for making changes.

Membership in the GSG is open to all interested government agencies and is subject to approval of the GSG Chair. Additional information on GSG responsibilities and membership is contained in the GSG Bylaws.

(b) Industry Steering Group (ISG)

The ISG provides oversight and direction to the GCC from an industry perspective. For example, controversial guidelines and/or material design allowable issues are reviewed by the ISG and recommendations are made to the GSG and GCC. The ISG is also responsible for the oversight of technical activities undertaken by the current ISG coordinating contractor, including the development of specialized ISG and GSG statistical analysis tools that conform to current MMPDS guidelines. Funding for those activities is the responsibility of the ISG. A subcommittee of the ISG oversees the technical and financial aspects of that activity in collaboration with the GSG.

ISG membership is open to aerospace metallic material suppliers and users throughout the world. Membership in the ISG requires payment of an annual membership fee and acceptance of an annual agreement. Further details concerning ISG membership requirements and benefits may be obtained from the ISG website <https://www.mmpds.org>. Additionally, information on membership and responsibilities is contained in the ISG Bylaws.

(c) Airframer Steering Group (ASG)

The ASG provides oversight and direction to the GCC from the perspective of the aircraft and aerospace manufacturers. Most ASG members are also ISG members, although ISG membership is not required to participate in the ASG. The ASG selects a chair and vice-chair to lead discussions.

ASG membership is only open to representatives from aircraft and aerospace manufacturers and airframe component suppliers.

(d) Material and Technical Services Steering Group (MATSSG)

The MATSSG provides oversight and direction to the GCC from the perspective of the aircraft and aerospace material suppliers and technical service organizations. Most MATSSG members are also ISG members, although ISG membership is not required to participate in the MATSSG. The MATSSG selects a chair and vice-chair to lead discussions.

MATSSG membership is only open to representatives from aircraft and aerospace material suppliers, test houses, and other technical service organizations.

(e) Propulsion Steering Group (PSG)

The PSG provides oversight and direction to the GCC from the perspective of the propulsion and propulsion materials supplier and technical service organizations. Most PSG members are also ISG members, although ISG membership is not required to participate in the PSG. The PSG selects a chair and vice-chair to lead discussions.

PSG membership is only open to representatives from aircraft propulsion and propulsion materials supplier organizations.

Section 2.03 Task and Working Groups

(a) General

Standing and *ad-hoc* task or working groups may be formed at any time based on the recommendation of the GCC Chair or a task group and approval by the GCC. Task groups typically focus on broad subject areas (*e.g.*, materials, fasteners, guidelines) and are needed long term. Working groups typically focus on specific technical issues within a subject area for a short term. All task and working groups shall function in an advisory capacity to the GCC.

Each working group shall be comprised of a minimum of three persons who are responsible for electing a chair. If needed the GCC shall appoint one. Working group chairs shall report on their activities at task group meetings and at such other times as directed by the Task group chair. All working group chairs should prepare a written report summarizing their respective group's activities since the previous meeting. This report shall be included in the MMPDS archives. Details concerning the governance, responsibilities, and membership requirements for the four standing task and one extant working groups follow.

(b) Task Group Governance

All task groups are co-chaired by one representative chosen by the Secretariat and one representative chosen by the GSG. Task group co-chairs may continue to serve indefinitely, at the pleasure of the Secretariat and the GSG. Changes in task group chairs will be made at the next coordination meeting to attending representatives. Leader duties include:

- Work under the supervision of the MMPDS Program Manager.
- Preside over task group sessions.
- Establish meeting agendas and summarize status of existing agenda items.
- Introduce and present agenda items for general discussion.
- Identify and coordinate presentations on topics of interest for future meetings.
- Coordinate activities between GCC meetings with all working groups under their task group.
- Appoint heads and members of sub-committees.

(c) Guidelines Task Group (GTG)

The GTG focuses on the development and maintenance of state-of-the-art analytical and experimental methods for the development of metallic material and joining system design allowables. The MMPDS Secretariat is responsible for the development and verification of proposed new analytical and experimental procedures. These new guidelines must be reviewed and approved by the GTG before they are incorporated into the Handbook. The GTG oversees relevant work of specialized task and working groups, *e.g.*, guidelines recommended or requested by the ETTG, FTG, and MTG.

Active GTG members are sought from industry and government, representing major metallic material suppliers and users throughout the world.

(d) Materials Task Group (MTG)

The MTG focuses on the development and maintenance of reliable, up-to-date static strength design properties for metallic aircraft and aerospace materials.

The MMPDS Secretariat is responsible for the collection of certification and other supporting strength data (e.g. elastic modulus, compression, shear, bearing, and typical and full-range stress strain response) on a proprietary basis from industry and government suppliers and users of these materials. Data sets submitted by any entity may be partially or entirely rejected by the MTG Chair at his or her discretion. The cause for rejection shall be documented in the meeting minutes.

The MMPDS Secretariat assists with the statistical analysis of these data in accordance with current guidelines. The MMPDS Secretariat leads the presentation of these analysis results to the MTG for review and approval before the new or updated data are added to the Handbook.

The MTG is responsible for the development and maintenance of reliable, up-to-date “dynamic” material properties, *e.g.*, load and strain control fatigue, fatigue crack growth, plane stress, and plane strain fracture toughness. The MTG is also responsible for the development and maintenance of reliable information and quantitative material data with respect to the corrosion resistance and/or environmental issues associated with the use of these materials in aircraft and aerospace structures.

Active MTG members are sought from industry and government, including a mix of individuals with specialized metallurgical and processing skills and individuals with engineering needs to safely and efficiently incorporate these materials into critical aircraft structures.

(e) Fasteners Task Group (FTG)

The FTG focuses on the development and maintenance of reliable, up-to-date static strength design allowables for aircraft and aerospace metallic material fasteners and metallurgical joints.

The MMPDS Secretariat is responsible for development of guidelines specific to fasteners and joining technologies. These methods must be proposed to the GTG for final approval prior to any addition or changes to the Handbook methods or properties.

The MMPDS Secretariat is responsible for the collection of certification and other supporting fastener data on a proprietary basis from industry and government suppliers of these joining systems. Data sets submitted by any entity may be partially or entirely rejected by the FTG Chair at his or her discretion. The cause for rejection shall be documented in the meeting minutes. The MMPDS Secretariat assists with the statistical analysis of these data in accordance with current guidelines. The MMPDS Secretariat leads the presentation of these analysis results to the FTG for review and approval before the new or updated values are added to the Handbook.

The MMPDS Secretariat facilitates review and discussion of raw data submitted by fastener suppliers or independent testers in an open forum. Data suppliers that submit data for publication in MMPDS should understand that, due to the nature of the review process, some sanitized raw data may be shown, discussed and commented on by competitors in the interest of publishing accurate allowables data.

To address any proprietary issues:

- (1) During the open review process, the data will be presented to the group in a format which will mask individual data values.

- (2) If discussions of specific data point values become necessary, approval from the data supplier must be obtained and documented in the meeting minutes. The raw data shall not be made available to competitor fastener supplier FTG members in any hard or electronic copy.
- (3) Raw data shall not be included in the minutes distributed by the Secretariat; however, the Secretariat will complete the general circulation of final reports containing final allowables data (tables and curves) to MMPDS membership for approval. In specific instances for a particular data set, a fastener supplier may request that no raw data, in any form (including sanitized) be made available to competitor FTG members. The FTG will address these instances on a case-by-case basis.

Active FTG members are sought from industry and government who have specialized knowledge concerning the design, testing, and/or reliable usage of mechanical fasteners and other joining technologies in aircraft and aerospace structures. Membership to the FTG is open to all interested parties. All FTG members may fully participate in all guideline and rule making discussions, voting and any new data set or sunset reviews. FTG members are expected to be, or to become, proficient users of the fastener analysis procedures defined in the Handbook guidelines.

(f) Emerging Technology Task Group (ETTG)

The ETTG focuses on the development of reliable, up-to-date design allowables for emerging technologies including, but not limited to, process sensitive materials and joining technologies, *e.g.*, additively manufactured metals and friction-stir welded joints.

The MMPDS Secretariat is responsible for development of guidelines specific to process sensitive materials and joining technologies. These methods must be proposed to the GTG for final approval prior to any addition or changes to the Handbook methods or properties.

The MMPDS Secretariat is responsible for the collection of certification and other supporting data on a proprietary basis from industry and government suppliers of these materials and joining systems. Data sets submitted by any entity may be partially or entirely rejected by the ETTG Chair at his or her discretion. The cause for rejection shall be documented in the meeting minutes.

The MMPDS Secretariat assists with the statistical analysis of these data in accordance with current guidelines. The MMPDS Secretariat leads the presentation of these analysis results to the ETTG for review and approval before the new or updated values are added to the Handbook.

Active ETTG members are sought from industry and government who have specialized knowledge concerning component and/or material design, component and material manufacturing, testing, and/or reliable usage of components and/or materials and joining technologies to be considered for Volume II.

(g) Task Group Interdependence

The Guidelines Task Group reviews and approves all guidelines used to develop content for Chapters 1-8 of the Handbook. Approved Guidelines are expected to cover 80% or more of data generation, analysis, and publication scenarios. The ETTG, FTG, and MTG conduct their activities within the general bounds approved by the GTG. At the Task leader's discretion, engineering judgment is used to cover situations not addressed by existing guidelines. Proposals made to the

MMPDS Coordinating Committee must explicitly document such cases for discussion prior to approval for inclusion in the Handbook. In case of disagreements about these cases, the MMPDS Coordinating Committee, *i.e.*, individuals physically attending that Task group will each have one vote. The Secretariat will document the final count. The GCC can accept or reject the Task group's decision.

(h) Working Group Governance

All working group chairs and vice-chairs will be selected from the pool of active MMPDS GCC members and approved by the ISG and GSG.

Working group chairs may continue to serve indefinitely, at the pleasure of the working group membership, the ISG, and GSG. Current leadership positions may be continued in the event he/she transfers employment from one member organization to another. A formal announcement will be made at the next coordination meeting to the representatives in attendance. Any comments or concerns shall be resolved at the next coordination meeting by the representatives in attendance.

Participating MMPDS GCC companies and government agencies may replace working group members who leave their employment. However, in the event a chair position becomes open, the GCC will then select a replacement at the next coordination meeting.

Working group chair and vice-chair duties are described below:

- **Chair** - The task or working group chair shall preside at all regular and special meetings. Chair duties at a minimum shall include the following:
 - Preside over working group meetings.
 - Introduce and present agenda items for general discussion
 - Coordinate closely between meetings with the MMPDS Secretariat
 - Establish meeting agendas and summarize status of existing agenda items
 - Recruit appropriate experts to resolve technical questions of their working group
- **Vice-Chair** - Where appropriate, a vice-chair may also be selected to work with the chair of a working group. If the chair's position becomes vacant for any reason, the vice-chair shall immediately assume the position of chair. Vice-chair duty is to work with the chair on working group activities.

(i) Volume II Working Group (V2WG)

The V2WG was formed at the request of the GSG to develop an outline for a new handbook devoted to process intensive metals and joining technologies. The group investigates, develops, and proposes technical guidelines and regulatory advice on relevant topics including data generation and analysis, design philosophy, certification and qualification, materials and machines, and quality assurance. Guidelines and handbook content recommended by the V2WG must be reviewed ETTG and/or GTG and approved by the GCC.

Section 2.04 Secretariat

The Secretariat shall be an unbiased third party representing neither industry nor government. For example, a technical nonprofit organization could be chosen and contracted to act as the MMPDS Secretariat. Responsibilities of the Secretariat shall be as follows:

- (1) The MMPDS Secretariat shall arrange for all meeting facilities.
- (2) The Secretariat shall function as archivist and meeting facilitator. Upcoming agenda packages and meeting minutes for bi-yearly coordination meetings (typically held in April and October) shall be distributed to active MMPDS members according to the following schedule:
 - Meeting Announcement: at least 90 days prior to start of coordination meeting
 - Meeting Agenda Package: approximately 4 weeks prior to start of coordination meeting
 - Meeting Minutes Package: approximately 4 weeks after meeting conclusion
- (3) The Secretariat shall coordinate and/or perform statistical analysis, research, testing, and reporting tasks associated with ongoing maintenance of the MMPDS.
- (4) The secretary position for individual task and working groups is reserved for a member of the MMPDS Secretariat and shall have the following duties:
 - Record and maintain minutes of all meetings and activities
 - Have charge of all papers, archives, records and property
 - Issue all notices of meetings
 - Maintain an up-to-date membership roster
 - Provide periodic reports on the activities of the task or working group.

Article III. Change Procedures

Changes to the MMPDS GCC Bylaws, *i.e.*, this document, and the MMPDS Handbook may be made by following the procedures described below. In all cases, every attempt should first be made to achieve a consensus. However, when it has been determined that a consensus cannot be achieved a proposed change can be put to a vote.

Section 3.01 MMPDS Handbook Changes

(a) General Process

The general process to be used for making changes to the MMPDS Handbook is as follows:

- Changes may be proposed by any Steering, Task or Working Group or any MMPDS member at a MMPDS GCC meeting.
- Any proposed change to the documented Chapter 9 guidelines on property or allowable calculations shall be made prior to the publication of values based on the changed process.
- If the Chair determines that there is sufficient interest after discussion in the open forum, an agenda item is established and a tracking number assigned.
- The agenda item is assigned to a Task Group who may in turn assign it to an existing or newly created Working Group.

- The assigned Group investigates the agenda items as required and reports back to the MMPDS GCC with a recommendation to make an MMPDS Handbook change or not.
- A consensus of the MMPDS GCC should first be sought for any change recommended and, if obtained, the change shall be made. If the Chair determines that a consensus cannot be achieved the item may be held open or put to a vote using the procedure described below.
- If an assigned item has been held open due to controversy for 5 or more years, or the item has been designated as a “fast track”¹ item by the ISG or GSG, the task or working group chair may request that a formal vote be taken on any guideline or data item that is ready for acceptance and inclusion in the Handbook.

(b) Voting

Voting shall be by a show of hands with each MMPDS GCC member in attendance having one vote. Any change receiving a 2/3 majority or greater vote, excluding abstentions, in its favor shall be forwarded to the GSG for final approval. The GSG shall have the power to veto any change forwarded to them.

Section 3.02 MMPDS General Coordination Committee Bylaws Changes

(a) General Process

Changes to the MMPDS GCC Bylaws may be proposed by any Steering, Task or Working Group or any MMPDS GCC member at a MMPDS GCC meeting. If the MMPDS GCC supports the proposal by consensus or vote (same as described in Section 3.01 for Handbook changes), the proposed changes are forwarded to the ISG and GSG for consideration.

Changes to the MMPDS GCC Bylaws shall only be made jointly by the ISG and GSG. A consensus of the industry and government representatives present at a joint ISG/GSG meeting should first be sought and, if obtained, the changes can be made. If a consensus cannot be achieved then the change may be put to a vote.

(b) Bylaws Voting

Voting shall be by open ballot wherein each GSG member agency and each ISG member company/organization shall have one vote weighted in proportion to their contribution to their membership in the GSG or ISG. Any change receiving a 2/3 majority or greater vote in its favor shall be forwarded to the GSG for final approval. The GSG shall have the power to veto any change forwarded to them. If a proposed change is unacceptable to the GSG it can be vetoed prior to voting.

To clarify how the vote tallying will occur, here are the guidelines that will be used:

- (1) Only members in good standing who have made actual contributions during the active year are counted in the total. Members who have promised payment shall not be included in the voting.

¹ An item may be designated as a “fast track” item if the ISG or GSG considers it a priority that the changes and/or additions in Handbook data or guidelines covered by that item is approved in time for incorporation into the next edition of the Handbook.

- (2) Within a given year, as the member contributions fluctuate, the fractional contribution of each member may change. The fractional contribution shall be calculated based on the membership contribution of those member companies casting a ballot at the time of the vote.
 - a. The member contribution of a company abstaining shall be included in the total.
 - b. The member contribution of a company not voting shall not be included in the total.
- (3) In general, voting will occur during a meeting; however a member company/ organization in good standing that is not present at the meeting may cast a proxy vote. This vote shall be received by the Secretariat prior to the vote at the meeting.
- (4) Voting may also occur by email. Only votes arriving by the voting deadline shall be valid and counted.

A voting example is provided in Appendix B for clarification.

Article IV. Meetings

Two MMPDS coordination meetings are typically held each year, generally in Spring and Fall.

Section 4.01 Registration

The MMPDS Secretariat shall maintain the list of active MMPDS members. An individual will automatically become a member of the MMPDS GCC by registering and attending a GCC meeting. The primary contact at Battelle is Cyndee Scalf:

Cyndee Scalf
Phone: (614) 424-6557
Fax: (614) 458-6557
E-mail: scalf@battelle.org

Section 4.02 Meeting Procedures

MMPDS General Coordination Committee meeting procedures shall be as follows:

1. Chair or vice-chair will open the meeting with introductions, and comments on the status of current MMPDS coordination activities.
2. Secretary will ask for comments on the prior meeting's minutes; then propose their approval with noted amendments, if any.
3. Chair or secretary will introduce special presentation speakers, as appropriate.
4. Secretary will review the current status of all open agenda items, along with the recommendations of the assigned task or working group. New agenda items will be identified in the course of this presentation.
5. Chair or vice-chair will coordinate selection of next meeting location and provide closing remarks / summary.
6. Meeting adjourned.

Section 4.03 Item Introduction Procedures

1. An MMPDS GCC member may coordinate with either the chair or vice-chair of the applicable task group to define the proposed item. This coordination activity can occur prior to the general meeting, whereupon the whole task group will consider the item for discussion, disposition and/or revision.
2. Alternatively, an item can be introduced at the applicable task group and discussed by the full membership. The goal of item introduction and discussion is to create a well-defined agenda item for subsequent consideration.
3. At the discretion of the Chair or Secretariat, item introduction, discussion, and definition will be limited to 25 minutes.

Appendix A Change History

Revision	Date	Description	Author
A	October 2010	Document Revised in Entirety by Bylaws working Group: Lori Flansburg (chair), Bret Vogel, Roy Nash, John McCarrick, Mark Freisthler, Steve Thompson, Robert Eastin, and Rich Rice.	L.K. Flansburg
B	May 2013	Added Propulsion Steering Group (PSG)	B. A. Young
C	September 2019	Document revised to clarify governance of Task and Working Groups. Add a description of the ETTG and its role. Added references to Volume II development under the supervision of the MMPDS GCC. Format standardization.	D.A. Hall
D	August 2023	Added Appendix C Glossary.	D.A. Hall

Appendix B Bylaws Voting Example Problem

(Reference Article III, Section 3.02(b))

Suppose there are 4 ISG members and 3 GSG members which make up the combined ISG/GSG group. At a given meeting, their membership contributions are as shown in the table below.

The total membership contribution is summed, in this case to \$200,000. This total does not include the contribution of ISG #4 who was not in attendance and did not provide a proxy vote to the Secretariat prior to the meeting. And the fractional contribution of each member company/agency is computed by dividing their individual contribution by the total membership contribution. For example, Member ISG# 1 contributed \$25000 to the \$200000 total or $25000/200000 = 0.125$.

During the meeting, a Bylaws item comes up for vote and the votes are cast as shown in Column 4 of the Table. Each company/agency gets a single vote and the vote is assigned a numerical value based on their fractional contribution. The yes numerical votes are summed. If the total exceeds the required $2/3$ (0.667) then the change carries.

Member	Total Annual Membership Contribution (\$)	Fractional Contribution	Vote	Numerical Vote Yes	Numerical Vote No	Numerical Vote Abstain
ISG #1	25,000	0.125	Y	0.125		
ISG #2	5,000	0.025	Y	0.025		
ISG #3	15,000	0.075	N		0.075	
ISG #4	10,000	Not at meeting, no proxy vote provided				
GSG #1	50,000	0.25	A			0.25
GSG #2	100,000	0.50	Y	0.50		
GSG #3	5,000	0.025	Y	0.025		
Total	200,000*	1.0		0.675	0.075	0.25

* \$200000 does not include ISG #4 who was not in attendance and who did not provide a proxy vote to Battelle prior to the meeting. It does include the contribution of GSG#1 who abstained.

The numerical value of the "Yes" vote sums to 0.675. A $2/3$ majority (0.667) is required for a change to occur, thus this particular vote is carried.

Appendix C Bylaws Glossary

60-Day Approval – This approval mechanism is reserved for complicated and/or highly significant items that were acceptable to the GCC with consequential changes. Examples include replacing a paragraph in the proposed text, modifying a data generation requirement, re-wording of text to be done after the meeting (usually approved by a select group). The 60-Day option is normally reserved for Fall MMDPS GCC meetings. In rare instances a 60-Day approval may be granted to allow more time to review a lengthy or complex item. It has been used occasionally to address critical issues that the committee wants to resolve before the next GCC meeting. This might include Handout Book items. The GCC has 60 days following publication of the Final Minutes to review the item. If no negative comments are received during that time period the item is Approved and Closed.

Agenda Book – The Agenda Book is compiled by the Secretariat containing Agenda Item documentation. An electronic version of this Agenda Book will be posted on the MMPDS member SharePoint site and sent to registered GCC attendees and to ISG and GSG Main Contacts approximately 30 days before the beginning of a GCC meeting so that attendees will have time to prepare for the upcoming meeting.

Agenda Item — There are several types of Agenda Items. All proposed changes for the next version of the Handbook shall be written and included in the Agenda Book. Other topics for review and discussion may also include write-ups without proposals which will either be in the Agenda Book or presented as a Handout. Topics typically include data analysis of alloys, revisions or updates to guidelines, presentations, or other additional information for inclusion in the Handbook.

Approved & Closed — An Agenda Item that has been reviewed at a GCC meeting and approved as submitted will be recorded as Approved & Closed in the Preliminary and Final Minutes.

Approved with Changes & Closed — An Agenda Item that has been reviewed at a GCC meeting and modified during the discussion by the members attending will be recorded as Approved with Changes & Closed in the Preliminary and Final Minutes. Examples of changes documented in this manner include, but are not limited to, modifying a word or a sentence to improve clarity, correcting calculations or significant typographical or grammatical errors, removing a sentence or paragraph that does not change the intent of the item, or accepting changes shown in a Handout issued for the same item.

Approval – The MMPDS Handbook is a consensus document. All changes are reviewed and approved by members of the MMPDS General Coordination Committee. Rules for eligibility and voting at a meeting are documented in the MMPDS GCC Bylaws which are posted at <https://www.MMPDS.org>. Final approval of items occurs with the approval of the Final Minutes. The default approval period of the Final Minutes is 30 days after they are released by the Secretariat. Some items are on a 60-day Approval, described above. An item will be considered approved if no negative technical comments are received within this time period. If negative technical comments are received the item will be held open for further review at the next GCC meeting.

Closed – An Agenda or Handout item recorded as closed can have several consequences. 1) An Agenda Item with a proposal that is closed becomes approved content for the next release of the Handbook. Examples include new guidelines, new tables or figures, or new text for the Handbook. 2) An Agenda or

Handout Item may document the result of investigations or research conducted by the Secretariat or a GCC attendee presenting a topic for discussion. Examples include presentations on a new alloy, test or analysis method, or a comparison of current methods.

Closed with No Action — An Agenda or Handout item that the GCC decides to stop active investigation. This may occur because the item is no longer needed, another item has resolved the problem, or the GCC has instructed the Secretariat to discontinue investigating the topic.

Consent Agenda Item — A consent agenda groups the routine, procedural, informational, and self-explanatory non-controversial items typically found in an agenda. These items are then presented to the GCC in a single motion for an up or down vote after allowing anyone to request that a specific item be moved to the full agenda for individual attention. Other items, particularly those requiring strategic thought, decision making or action, are handled as usual.²

Continue — An item that will be researched, expanded, or modified for a future meeting. Any Agenda or Handout Item that is not closed will be continued. An item may be continued because the item is not ready to be approved by the GCC.

Editorial Change — A correction made by the Secretariat without GCC review. Examples include typographical, grammatical, format errors that have no impact on the intent of the Handbook. The Secretariat may or may not document these changes in a Consent Agenda Item depending on whether it would be beneficial to highlight the revision.

Handout Book — The Handout Book is compiled by the Secretariat containing Handout Item documentation. An electronic version of the Handout Book will be posted on the MMPDS member Share Point site and sent to registered attendees and to ISG and GSG Main Contacts approximately seven days before the beginning of a GCC meeting so that attendees will have time to prepare for the upcoming meeting.

Handout Item — There are several types of Handout Items. 1) updates to the most recently circulated Agenda Book to correct significant typos, grammatical errors, figure, table, or format problems, 2) an update on a developing topic such as a new guideline, data generation approach, or material analysis, 3) or items not prepared before the circulation of the Agenda Book. Typically, Handouts do not include changes for the next revision of the Handbook. An exception is allowed for the Fall meeting where minor or non-controversial revisions may be presented in a Handout and approved. Examples are the addition of stress-strain curves for a new data set, update of fracture toughness or stress corrosion information. Handout Items cannot be approved except through the 60-Day Approval process.

Minutes — The Secretariat produces Preliminary and Final Minutes for each MMPDS GCC meeting. Preliminary Minutes are issued within 14 days of the end of an MMPDS GCC meeting. Final Minutes are issued within approximately 60 days of the end of an MMPDS GCC meeting. As discussed in the Foreword of each revision of MMPDS, Minutes are acceptable for publication in the next revision of the Handbook and may be used to support certification applications.

² <https://www.councilofnonprofits.org/>

New — An item created during a GCC meeting will be immediately recorded in the Preliminary Minutes and identified as New. An item number will be assigned, often before the final minutes are delivered. In some cases, no number is assigned until the item is further discussed at later meetings to determine if effort should be expended on the item. It will then be assigned a number.

No Item Number (NIN) Item — Items which need discussion to determine if effort should continue on the topic are not assigned an item number. If it is determined that effort should continue, and an Agenda Item or Handout Item is prepared, an item number is assigned. An example is a suggestion at a meeting where there was insufficient time to discuss it. Making it a NIN allows for discussion at the subsequent meeting to determine if there is interest or a need to pursue it.

Presentation — An item created for information only but significant enough to warrant documenting in the historical records maintained by the Secretariat. Presentation content may or may not be included in the Final Minutes at the discretion of the presenter. Examples include development of a new test method or test standard, a new theoretical or practical approach relevant to Handbook users. Presentations may or may not be included in the Agenda or Handout Books depending upon the presenter's preference.

Status — An item that reports current updates on activities of interest to the GCC. Examples include, but are not limited to, external committee activities, legacy alloy data requests, open discussions on the meeting schedule, quick oral reports from ad hoc groups, etc. The Preliminary and Final Minutes will document relevant information from the GCC meeting for future reference.