Quality Control strategy for Olympic Equipment

1. Introduction
Sailing is a technical sport and is necessarily very equipment-dependent. Equipment performance optimization is at the core of high level sailing competition. World Sailing as the governing body of the sport must supervise Olympic Equipment, ensuring that it is built in strict accordance to specifications and ensuring that there are systems in place to identify alterations.

For a number of years, the Board of World Sailing and Council through its discussions and debates have made clear that they want equipment control to be improved in the Olympic Classes.

This report has been prepared by the Executive Office following the consultation with the Working Party listed in section 7.

2. Background
Olympic Classes have different models regarding the interaction with equipment.

For designs where control of the equipment is regulated by having as part of the Class rules a clear set of technical specifications and measurements to adhere to. These are the so called “measurement controlled” Classes. The tolerances within these rules allow manufacturers some level of equipment development, adding an equipment development side to the competition that is endorsed and promoted accommodating different styles of sailing and different physiques.

Measurement controlled Classes may also require manufacturers to be licensed and may have additional requirements for their manufacturers beyond the measurements included in the class rules. For these Olympic classes, there must be policies in place aiming to seek that each individual manufacturer makes the same product available to everyone.

For designs controlled by the right holders, because the technical specifications and measurements that builders must adhere to are not public (because they are the intellectual property of those who created them) they are the so called “manufacturer controlled” Classes. In these cases, the Class rules do not allow any equipment development, aiming to have all competitors with the same equipment.

In some cases, feedback received from sailors and coaches has indicated in the past that equipment has not always been built to an absolute consistent standard where it is meant to, leading to sailors purchasing and testing multiple items to seek the best performing.

World Sailing has access to the builders manuals, which provide detailed information on materials, techniques, tolerances, and requirements to build the equipment. Through an active Quality Control system World Sailing could ensure that for Olympic classes, the builder manuals are sufficiently detailed and that there are processes to prove adherence to it. Further, the content could be used to develop measurements and tools to identify equipment alterations and evaluate if discrepancies are the result of inherent manufacturer tolerances or unsportsmanlike practices.

3. Objective
To implement a Quality Control system for equipment of Olympic Classes selected for the 2024 Olympic Event that allows to monitor and evaluate that equipment is built in strict accordance to the specifications, allowing alterations to be identified and reassure our members that equipment is being controlled and Class rules adhered to.
Due to the different models regarding the interaction with equipment among Olympic Classes, the scope of work and structure of the Quality Control system will be different from one Class to another. It is not the intention to standardise the way equipment is controlled among all Olympic Classes.

For “measurement controlled” equipment, the Quality Control system will aim to ensure that for equipment items designated by World Sailing and each Class, where an individual manufacturer produces a specific model of equipment within the range of the measurements allowed by the rules, the model is made available to all competitors:

(i) requiring to control against an agreed set of specifications in order to make that same equipment model available to all competitors.
(ii) requiring to have the means to identify alterations to models which are intended to be identical.
(iii) requiring to have defined processes to license new manufacturers, new models, new moulds, changes to building specifications, and including defined deadlines ahead of major events.

For “manufacturer controlled” equipment, all above items are applicable with the distinction that the scope of work will also require to develop measurements and obtain the relevant information from the builder manuals to develop inspection methods.

4. Quality Control system

The 2024 Olympic Classes contracts and the 2024 Commercial Undertakings with manufacturers include the framework for the provisions towards achieving these objectives including the following requirements:

(i) Require Class rules to require manufactures of the applicable equipment items to be licensed and have signed Commercial undertakings with World Sailing and to have a unique reference number applied to the equipment.

(ii) Require World Sailing approval to any evolution or changes to building specifications. World Sailing will only give approval if satisfied that updated equipment is fit for purpose, has adequate longevity of use and is available for purchase within a reasonable time. Such approval may therefore be delayed or only for prototypes or may require assessments and trials to validate the new Class Rules or Specifications prior to full production being commenced.

The Quality Control system will be a structured and documented management system providing the framework for documenting and assessing work performed by the manufacturers for carrying out required Quality Assurance (QA) and Quality Control (QC) activities.

The work will be undertaken by WS technical staff or its appointed delegates (International Measurers, appointed specialists, consultants) in consultation with a specific Class work force (which may be more than one per Class if different work forces are required for different equipment items) composed of:

(a) a member of the Class technical committee or a Class International Measurer,
(b) the copyright holders or builders,
(c) the site manufacturer representatives,
(d) the groups listed in the following table where applicable:
## Olympic Equipment Quality Control plans – For discussion

**October 2020**

OCSC meeting – Agenda item 8.1 & EQ meeting – Agenda item 11.a.ii

### Scope of work:

<table>
<thead>
<tr>
<th></th>
<th>Proposed groups to consult with:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class¹</td>
</tr>
<tr>
<td>1</td>
<td>Identify equipment items subject to the control scheme (those which are being produced to be identical: whether it’s a manufacturer controlled Class with limited manufacturers aiming to produce equalised equipment or a measurement control Class with each manufacturer aiming to make their models available to everyone)</td>
</tr>
<tr>
<td>2</td>
<td>Identify copyright holders, manufacturers, suppliers for each part and applicable licensing methods.</td>
</tr>
<tr>
<td>3</td>
<td>Evaluate the content of existing building manuals and building specifications and develop the required measurements to allow evaluating equalisation against the applicable tolerances and other production requirements.</td>
</tr>
<tr>
<td>4</td>
<td>Document the agreed tolerances and correction methods for non-compliances.</td>
</tr>
<tr>
<td>5</td>
<td>Establish equipment identification, serial numbers, and tracking methods to identify equipment that has passed controls and is considered eligible for competition.</td>
</tr>
<tr>
<td>6</td>
<td>Define common reporting methods of executed controls and measurements.</td>
</tr>
<tr>
<td>7</td>
<td>Define the approval process for implementation of new tooling/moulds/materials/new manufacturing sites, etc.</td>
</tr>
<tr>
<td>8</td>
<td>Define the approval process for design specification changes and implementation plans.</td>
</tr>
<tr>
<td>9</td>
<td>Control the confidential information and database management of measurements and historical equipment tracking log.</td>
</tr>
<tr>
<td>10</td>
<td>Develop recommendations to International Measurer’s for equipment inspections at events.</td>
</tr>
<tr>
<td>11</td>
<td>Perform audits and inspections of manufacturing facilities.</td>
</tr>
<tr>
<td>12</td>
<td>Reporting progress or non-compliances against the policy.</td>
</tr>
</tbody>
</table>

¹ Class management or class technical committee where applicable
Olympic Equipment Quality Control plans – For discussion

October 2020
OCSC meeting – Agenda item 8.1 & EQ meeting – Agenda item 11.a.ii

*in those cases where the Classes hold the relevant technical information
Further details on each of these scope of works are included in Appendix 2

5. Resources and financing

The Quality Control system intends to use the expertise of the many volunteers that conform World Sailing. However, this new and important scope of work will require to dedicate a considerable number of man-hours that will come at a cost. The required administrative services, the use of CAD software, the development of technical deliverables, the allocation of a dedicated staff and other areas will require to have a dedicated budget to allow to plan and deliver the scope of work.

Manufacturer Policy Fee

This section has been provided by the Executive Office for information:

The additional resources required to implement this work must be found from somewhere – there are many important calls on World Sailing’s resources and the Board expressed in the debates around this scope of work in the 2019 Annual Conference that it does not consider that the regulating production by manufacturers should be funded from general funds.

The current contract model allows World Sailing and the Olympic Classes to designate which items of equipment are controlled and subjected to an additional fee (The Manufacturer Policy Fee) up to 1% of the price of the equipment, defined per item of equipment.

The benefit to sailors being supplied with more uniform and controlled equipment will outweigh the relatively low additional cost that may be passed on via the manufacturers.

However, if any Olympic Class considers that there is a better model of funding this work, the Board is open to considering this. (See considerations below)

Manufacturer policy fee summary

1. The purpose of the Manufacturers Policy Fee is to cover World Sailing’s legitimate administrative costs in a non-discriminatory manner. It is a key principle that, once these costs are covered, any surplus will be returned to the manufacturers.

2. The Manufacturers Policy Fee is intended to be used to undertake the quality controls activities in respect of Olympic Equipment manufactured between 2021 and 2024.

3. The Fee received from manufacturers of an equipment item will be pooled, and used to create a ‘quality control budget’ for that Class (the “Class Budget”). The Class Budget will be utilized for the sole purpose of quality control and other related activities under the Commercial Undertakings within each Olympic Class.

4. The Class Budget will be utilized for the quality control of that Class. However, costs that apply to more than one Class will be divided between all budgets that it affects.

5. The Class Budget will be utilized to cover all other associated costs such as measurements controls, reports, additional audits and site-visits, meetings, monitoring compliance, developing required tools, and other arrangements dedicated solely for this purpose, including the associated costs of the specialists appointed by World Sailing to undertake the tasks.

Considerations

The Manufacturer Policy Fee would provide a dedicated Class budget that would allow to focus on each class priorities. The details of the model would require to be tailored to the particulars of each class, clarifying where necessary that contributions of each individual manufacturer shall be used for the Quality Control activities of the equipment items they produce.
The Executive Office will present an overview of the expected operational plan per class including a cost and budget forecast (and details of a proposed Manufacturer Policy Fee model) for each case. The cost and budget forecast will take into account the following considerations:

- common areas that apply to all classes and manufacturers (Allocation of a dedicated staff, required administrative services, etc) can be covered collectively.
- once the Quality Control system is developed, the development of technical deliverables and other scopes of work will be significantly reduced to maintaining administrative tasks and performing inspections
- Where possible, inspections, site visits, and specific scope of work will be covered by each affected individual manufacturer.
- Individual manufacturers responsible for additional scope of work shall bear the cost.
- Following the implementation of the Quality Control System, it is expected that the scope of work will be significantly reduced to maintaining administrative tasks and performing periodical inspections.

The Executive office will consult with each class to seek a model tailored for funding the work of their class.

6. Proposed timeline

The 2024 Olympic Classes and Commercial undertakings come into effect by the end of the 2021 Olympic Event. The timeline will vary for each Class as some have developed these areas further over the years, however, to control equipment that will be used in the 2024 Olympic campaign it is imperative that this scope of work is not further delayed.

The implementation and the timeline will depend on the resources available:

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2020</td>
<td>Draft operational plan overview consultation</td>
</tr>
<tr>
<td>January 2021</td>
<td>Agree on each class specific financial model</td>
</tr>
<tr>
<td>January 2021</td>
<td>Appoint dedicated staff member</td>
</tr>
<tr>
<td>February 2021</td>
<td>Appoint class specific workforce</td>
</tr>
<tr>
<td>May 2021</td>
<td>Review required changes to classes rules to implement the 2024 Olympic Class Agreement and Commercial Undertaking requirements</td>
</tr>
<tr>
<td>August 2021</td>
<td>Enforce the 2024 Olympic Class Agreement and Commercial Undertaking requirements</td>
</tr>
<tr>
<td>September 2021</td>
<td>Compile, review and assessment of current quality control documentation and control systems in place</td>
</tr>
<tr>
<td>December 2021</td>
<td>Development of additional documentation, implementation of requirements, development of database</td>
</tr>
</tbody>
</table>
7. Working party

In accordance with World Sailing regulations, the Equipment Committee is responsible for policy recommendations on equipment matters, and is responsible for recommending equipment policy with regard to the Olympic Sailing Competition.

A Working Party composed of the following members was appointed by the Equipment Committee to discuss this scope of work and to serve as reporting group for each Class specific work force once in place.

- Dina Kowalyshyn: Chair of the Equipment Committee and International Measurer (IM)
- Corinne McKenzie: Chair of the Olympic Classes Sub-Committee
- Jurgen Cluytmans: Chair of the International Measurers Sub-Committee and Equipment Rules Sub-Committee and International Measurer
- Dimitris Dimou: Olympic Classes Sub-committee member and IM
- Barry Johnson: Equipment Committee member and IM
- Bill Abbott: Equipment Committee member and IM
- Jo Aleh: Representative of the Athlete Commission
- Michelle Marchesini: Chair of the Coaches Commission
- Jaime Navarro: WS Technical and Offshore Director and IM
Appendix 1 – Further background

Letter sent on 1000 (UK) on Tuesday 13th August 2019, by email to Council members and MNAs;

12 August 2019

Dear Council and MNA Presidents,

**Olympic Equipment Fee**

As you are aware from our discussions at the Annual Conference and Mid-year meetings, we will be implementing new independent quality control processes to secure and improve the quality and consistency of Olympic equipment for the Paris 2024 Olympic cycle.

The intent of this is to ensure that the technical integrity of the sport can be assured, as the feedback that we’ve received from Sailors, Coaches and MNAs is that one-design equipment is not always being delivered to an absolutely consistent standard, when one-design is meant to ensure that the equipment is identical.

Sailors are having to purchase and test multiple components to ensure that they are sailing what they believe to be the best performing boat, developed to an Olympic standard. This leads to increased Olympic campaign costs for Sailors which is the opposite of what we wish to achieve for the sport.

Of course, in some Olympic classes there are limited issues with the equipment today, but that is because the equipment has been in use for a number of Olympic cycles and the sailors and MNAs have been investing over an extended period of time. The Olympic equipment fee will establish a standard to measure against, allowing a quality control to be applied against that standard, ensuring that Sailors and MNAs are getting what they are paying for and the development of the right tools to improve equipment inspections at our events.

This matter was first raised at the 2016 Annual Conference with submissions from MNAs related to quality issues with the Nacra equipment, but it is known to be the case of other classes too and we have subsequently seen equipment control issues at major events including the Hempel Sailing World Championships. World Sailing, as the governing body of the sport wishes to impose stricter controls on Olympic equipment manufacturers to ensure that the equipment is built in strict accordance with the specifications.

We are committed to addressing this issue to reduce costs and to protect the integrity of the sport for all stakeholders. The new Olympic equipment fee will fund an independent quality control process that will promote technological improvements and allow us to develop the right controls to ensure the technical integrity of the Class.

The new independent quality control processes will be funded through a fee of up to 1% levied on manufacturers. The manufacturers’ fee for each Class will only fund quality control processes for that particular Class. Twice yearly, the actual costs will be transparently reported back to the manufacturers and any surplus fee for that Class will be refunded to the manufacturers. The fee will then be reviewed on a Class by Class basis for subsequent years (again, up to a maximum level of 1%) to ensure that the right fee level is set going forward. The quality control checks for each Olympic Class are different and it is expected that ultimately the fee will vary by Class once the first year of inspections is complete.

---

Presidents of Honour:
HM King Constantine
HM King Harald of Norway

Directors:
Kim Andersen
Jan Dawson
Tuban Graal
Gary Jobson
Quanhai Li
W Scott Perry
Yairo Rocheux
Ana Sanchez
Nadine Stopenwalter

World Sailing Limited
Registered in the Isle of Man 79772C

Registered office
69 Athol Street, Douglas
Isle of Man, IM1 1JE

Tel: +44 (0)23 80 635111
www.sailing.org

... and it is expected that ultimately the fee will vary by Class once the first year of inspections is complete.
Appendix 1 – Further background

The new independent quality control process will include all main equipment items on the boat which need to be controlled and not just hulls. The manufacturers fee is entirely different to the World Sailing plaque fees, which relate to all World Sailing Classes and are approximately 0.2% of the retail price of the boat.

The World Sailing plaque fee provides a plaque that is applied to the hull but does not serve to control quality. The total plaque fees income received by World Sailing for all Olympic Class boats was £42k in 2018, which only covers the administration costs of the plaque process, all other plaque fees outside of this go to the Class Association. The plaque fees vary from Class to Class and it is therefore essential that the plaque fee and Olympic equipment fee are separated.

It is for this reason that this Olympic specific policy is within the Commercial Undertakings of the Olympic Classes contracts. The Olympic Classes do not enter into the Commercial Undertakings, it is the manufacturers who do so.

It is clear to the World Sailing Board that MNAs, teams and sailors expect World Sailing to directly take a lead in this vital area. This is why, after extensive discussions over a number of years (including at Olympic Classes Sub-committee meetings), the Board has decided to reform World Sailing’s approach in this area and address it via this method.

It should be noted that all Olympic Classes have already signed the Olympic Classes contract that includes the framework for the provision of a manufacturers fee. Contracts and Commercial Undertakings have been updated to include the Olympic equipment FRAND principles that have now become World Sailing policy.

The independent quality control process is to ensure that sailors and MNA’s are getting what they are paying for and the World Sailing Board is confident that these steps will further protect the integrity of the sport and lower the cost of Olympic campaigns.

Kind regards,

World Sailing Board
Equipment Selected for the 2024 Olympic events

5.1 - iQFOiL Equipment

With the selection of the iQFOiL as equipment for the windsurfing events, a manufacturer controlled class where equipment is intended to be identical, World Sailing has implemented in collaboration with the manufacturers a series of measures to this end.

In addition to building in accordance with the procedures of their building manuals, a series of additional controls and acceptable tolerances have been agreed.

The manufacturer is required to assign a unique identification number to every equipment item and maintain a database of the measures taken in each control. Some of the controls are measurements that can be recreated at an event with basic tools, some require the use of customised jigs and others are non-destructive load tests.

The manufacturer applies a QR code sticker to every equipment item that passes the Quality Controls. The QR code and the identification number allows World Sailing full access to all the logged information. It is expected that the recorded information will allow to resolve disputes of non-compliances and evaluate production against the agreed tolerances allowing to review them periodically.

Proposed focus scope:

- to ensure that builder manuals are sufficiently detailed and to document all policies and requirements.
- to develop the database to allow to keep a historical record of approved repairs and modifications.
- to develop the database to allow IM to access relevant information.
- to develop measurement procedures and tools to allow to identify alterations.
- to periodically audit measurements taken at manufacturing controls and evaluate agreed tolerances and controls.
- to define the approval process for implementation of new tooling, new moulds, changes to specifications or manufacturing sites, etc.

Proposed equipment items:

- Board, Sail masts, Boom, Fin, Sail, Battens, Hydrofoil.

Current manufacturing sites:

- China - Hydrofoil, sails and spars produced at different facilities
- Thailand - Board and fins
- New manufacturers expected with the implementation of the Olympic Equipment Policy
5.6 – IKA Equipment

IKA Formula Kite Equipment can be described as a pool of single manufacturer controlled equipment items. Manufacturers apply through the class to register different models of equipment. Within each manufacturer (and each model), equipment is intended to be identical.

Having completed the ‘Registration Period’ for 2024, the class is currently in the ‘Evaluation Period’. Manufacturers of equipment items that comply with the requirements will require to be licensed by World Sailing.

The registration process requires manufacturers to agree to record and report a number of measurements for each item produced. The measurement methods are tailored to each builder’s construction method some use jigs, some 3D scans. The tolerances are agreed during the registration process and equipment that passes the controls is marked with an individual identification number.

The class and World Sailing have access to the building specifications which include design files, laminate layups details and material specifications and receive quarterly reports.

Proposed focus scope:
- to ensure that each equipment item builder specification is sufficiently detailed.
- to monitor the reporting of controls, evaluate the measurements and tolerances.
- to develop measurement procedures and tools to allow to identify alterations.
- to periodically audit measurements taken at manufacturing controls and evaluate agreed tolerances and controls.

Proposed equipment items:
- Hydrofoils and Kites

Current manufacturing sites:
- Hydrofoils: Thailand (x3), Italy (x2), Taiwan, United Arab Emirates (x2), Portugal, Austria
- Kites: Ukraine and Vietnam (x3)
5.2 – 470 Equipment

The 470 class is a measurement controlled class which requires its hull builders to be licensed and sails to be certified by an official measurer or through the IHC system. The rest of the equipment may be manufactured and customised to the extends controlled by the dimensions and material restrictions in the class rules.

Hull builders are licensed by WS, in consultation with the Class and with the approval of the builder's MNA. All hulls built by each particular builder must be made to the same specification, the only customization permitted is in the hull colour and the control systems layout.

Each hull builder submits two copies of the laminate specifications for approval. One copy for WS and one for the Class. A successful prototype measurement by Class IM is required. During the prototype measurements, a set of photos that include pictures of hulls and decks before assembly, to show the internal structure of the hull, is sent to WS and a copy held by the Class chief measurer for subsequent comparisons during remeasurements at the builder or at events.

The template sets used for the measurements are all numbered and CNC produced by the same manufacturer, using the same CAD files. Each hull builder owns a set and the Class owns two, one of which is normally used at the Olympics and any other occasions where a hull measurement session has been organized.

A limited number of IMs are involved in prototype measurements to maintain the uniformity and consistency of the results.

Following approval of a mould, each production hull is measured on a reduced set of checks and a measurement form is filled. The certification authorities keep the original and a copy is given to the hull owner. No alterations to the construction or the shape is permitted, except from normal repairs and maintenance. Measurement forms are normally kept by the certification authorities and a copy is given to the hull owner.

Any desired change to the laminate specification requires the same approval procedure and then production must be switched to the new laminate.

Proposed focus scope:

- to evaluate current internal controls of each manufacturer (While the Class chief measurer has full knowledge and understanding of each internal quality control system, they could be fully documented using a standard report form and supplied to WS and the Class)
- to develop an archive of measurement forms from manufacturers
- to adopt and support the class successful best practices collaborating towards improvements.

Proposed equipment items:

- Hulls (and Masts if or once the class implements carbon masts – which will require mast manufacturers to be licensed)

Current manufacturing sites:

- Hulls: Japan, Germany, Poland, UK, Italy, New Zealand
Appendix 2 – Case Studies

5.3 – ILCA Equipment

ILCA manufacturers are signatories to an agreement that includes adherence to the ILCA Builder’s Manual (IBM). The class technical officers audit the manufacturers on an annual basis and report to the class against the requirements set in the IBM.

The class has implemented an approval process for new hull manufacturers that has been carried in accordance with the Olympic Equipment Policy, requiring World Sailing to approve each new manufacturer. Successful applicants are required to produce ten prototypes and report measurements derived from the IBM to the ILCA technical officers. A report is then produced for World Sailing’s approval which also requires an inspection of an International Measurer.

Proposed focus scope:

- to ensure that the builder manuals is sufficient detailed.
- to evaluate current controls, document requirements and evaluate tolerances.
- to develop a reporting system for manufacturers to monitor controls and develop a database to allow to keep a historical record.
- to develop measurement procedures and tools to allow to identify alterations.
- to periodically audit measurements taken at manufacturing controls and evaluate agreed tolerances and controls.
- to define the approval process for implementation of new tooling, new moulds, changes to specifications or manufacturing sites, etc.

Proposed equipment items:

- Hull, Mast, Daggerboard, Rudder, Battens, Sail

Current manufacturing sites:

- Hulls: Australia, Japan, UK, Poland
- Mast: UK & Hungary (aluminium), Australia (Composite)
- Daggerboards: Spain, Indonesia
- Rudders: Spain, Indonesia
- Battens: China, Philippines and Sri Lanka
- Sails: China, Philippines and Sri Lanka
Appendix 2 – Case Studies

5.4 – 49er & FX Equipment

Both the 49er and 49er FX are manufacturer controlled Classes. Equipment items produced by more than one manufacturer are intended to be equal. The same applies for equipment items produced by each individual manufacturer. Currently, the right holder controls that all licensed builders adhere to the builders manual while building equipment.

The relevant equipment items are then assigned a mark by the licensed manufacturer.

At events, Equipment Inspectors check that these equipment items have the relevant marks as required by the class rules.

Proposed focus scope:
- to ensure that builder manuals are sufficient detailed.
- to evaluate current controls, document requirements and evaluate tolerances.
- to develop a reporting system for manufacturers to monitor controls and develop a database to allow to keep a historical record.
- to develop measurement procedures and tools to allow to identify alterations.
- to periodically audit measurements taken at manufacturing controls and evaluate agreed tolerances and controls.
- to define the approval process for implementation of new tooling, new moulds, changes to specifications or manufacturing sites, etc.

Proposed equipment items:
- Hull, Mast, Boom, Daggerboard, Rudder, Battens, Sails, Spreader, Bowsprit, Hull wings.

Current manufacturing sites:
- China – sails, spar parts at different facilities (49er)
- Sri Lanka – sails (FX)
- Spain – spar parts (FX)
- UK – Hulls and appendages (49er & FX)
- Italy – appendages (49er & FX)
- Australia – spar parts (49er & FX)
- New Zealand – spar parts and hulls at different facilities (49er & FX)
5.5 – Nacra 17 Equipment

The Nacra 17 is another manufacturer controlled Class. The right holder controls that each builder of each equipment item adheres to the respective building specification. The relevant equipment items are then assigned a mark by the right holder. At events, Equipment Inspectors check that these equipment items have the required marks as required by the class rules.

Proposed focus scope:

- to ensure that each equipment item builder specification is sufficiently detailed.
- to evaluate current controls, document requirements and evaluate tolerances.
- to develop a reporting system for manufacturers to monitor controls and develop a database to allow to keep a historical record.
- to develop measurement procedures and tools to allow to identify alterations.
- to periodically audit measurements taken at manufacturing controls and evaluate agreed tolerances and controls.
- to define the approval process for implementation of new tooling, new moulds, changes to specifications or manufacturing sites, etc.

Proposed equipment items:

- Hulls, Mast, Boom, Daggerboard, Rudder, Battens, Sails, Spreaders, Bowsprit, Cross Beams, Rudder system, Dolphin strike, Daggerboard bearing systems.

Current manufacturing sites:

- Thailand- Hulls
- Austria – Battens
- France – Battens
- The Netherlands – Mast, Appendages, Spars, Sails and other items at different facilities