



The QA Handbook

W3C Working Draft 10 May 2004

This version:

<http://www.w3.org/TR/2004/WD-qa-handbook-20040510/>

Latest version:

<http://www.w3.org/TR/qa-handbook/>

Previous version:

- This is the first published version. It supersedes
- [QA Framework: Operational Guidelines](#)
- [QA Framework: Introduction](#)

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See Acknowledgments.

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Abstract

The *QA Handbook* (QAH) is a non-normative handbook about the process and operational aspects of the quality practices of W3C's Working Groups (WG). It is intended for Working Group chairs and team contacts, to help them to avoid known pitfalls and to benefit from experiences gathered from the W3C Working Groups themselves. It provides techniques, tools, and templates that should facilitate and accelerate the work of the WGs. This document is one of the QA Framework family of documents of the [Quality Assurance \(QA\) Activity](#), which includes the other existing or in-progress specifications: [Specification Guidelines](#); and, [Test Guidelines](#).

Status of this document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. A list of current W3C publications and the latest revision of this technical report can be found in the [W3C technical reports index](#) at <http://www.w3.org/TR/>.

This document is a W3C Working Draft (WD), made available by the W3C

Quality Assurance (QA) Activity for discussion by W3C members and other interested parties. For more information about the QA Activity, please see the [QA Activity statement](#).

This is the First Public Working Draft of this document. This draft accurately reflects the redesign of the QA Framework (QAF) resolved by the QA Working Group (QAWG) at its 2004 [Technical Plenary face-to-face](#). The *QA Handbook* (QAH) replaces and incorporates the best features of the former [QA Framework: Introduction](#) and [QA Framework: Operational Guidelines](#).

This draft is accurate in overall content. However it is incomplete in some details (generally indicated by "@@" or "TBD"), especially in the examples -- yet to be done. Because this is a significant departure from the last-published QAF, QAWG wants to get it out for review and comment on the overall direction as soon as possible. The just-mentioned incomplete details will be fleshed out in the next publication.

The *QA Handbook* will be coordinated with the other parts of the QA Framework: [QA Framework: Specification Guidelines](#) and [QA Framework: Test Last Call](#). The first publications of the various parts will occur somewhat more independently.

The QAWG does not expect this document to become a Recommendation. Rather, after further development, review and refinement, it will finally be published and maintained as a WG Note.

Publication as a Working Draft does not imply endorsement by the W3C Membership. This is a draft document and may be updated, replaced or obsoleted by other documents at any time. It is inappropriate to cite this document as other than work in progress.

The QA Working Group Patent Disclosure page contains details on known patents related to this specification, in conformance with [W3C policy requirements](#).

Comments on this document may be emailed to www-qa@w3.org, the publicly archived list of the [QA Interest Group \(QAIG\)](#). Commenters please note that your comments will be publicly archived and available, do not send information that should not be distributed, such as private data. Please give any feedback by 12 June 2004, so that it may be considered by QAWG at its next face-to-face meeting.

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This document has two separate external appendices, QAPD template and Charter template, which contain templates to help Working Group chairs and staff contacts to implement the document's good practice guidelines.

1. Introduction & roadmap

1.1. Five simple stories

Here are five use cases for *The QA Handbook* (QAH). Told as stories, they show when and how QAH could be helpful to chairs and staff contacts. They cover five different situations that might typically arise over the life of the WG.

The QA Handbook could be useful to chairs and staff contacts at Charter time...

Story 1: Think about quality early

The Charter-drafting team of a new Working Group, led by staff contacts and co-Chairs, looks through *The QA Handbook*. On the advice of the early-commitment Good Practice bits, the team debates how much it can realistically commit to at this early stage. After deciding on some test materials deliverables, milestones, and spec synchronization that it considers to be safe commitments, it uses the provided Charter Template to write it into the draft Charter.

Or it could be a big help to a chair who is trying to jump-start a test suite project...

Story 2: Jump-starting a testing effort

An existing Working Group has just finished writing its Requirements and Use Cases documents, and has begun to draft its specification. At the same time, it is taking a first look at its test suite (TS) plans. As recommended in the *The QA Handbook*, the Chair jump starts the TS project by appointing a QA Moderator and part-time TS team, whose first output is a quick QA Process Document (QAPD) using the provided QAPD template.

Or maybe the chairs/staff contacts are pondering the steps to transfer a test suite from an external entity...

Story 3: Test-suite transfer

A Working Group has re-chartered to finish a Second Edition of its specification, and to develop the next functional version, 2.0. The group did not develop a test suite (TS) during its first charter, but a collaboration of outside organizations and an industry consortium has developed one. The Chair and staff contacts have negotiated agreement in principle to transfer it to a stable home in W3C. In *The QA Handbook*, they find a handy checklist of preliminary steps, requirements, and specific activities for a smooth transfer.

Or maybe they need to take pre-emptive action due to looming possible license-issue hassles...

Story 4: Test suite licensing

A Working Group is almost ready to request Candidate Recommendation (CR), and has gotten a comprehensive test suite (TS) together for CR's trial implementation period. As the Chair starts to arrange for publication of the TS, she finds the WG split on issues around TS distribution licenses to use. Consulting *The QA Handbook*, she finds discussion of the pros and cons of the W3C licenses (the Software License and the Document License), and advice on resolving an optimal licensing strategy.

Or maybe they can borrow the experience of other W3C WGs for various useful and common test suite processes...

Story 5: Test development processes

A Working Group has built and released a basic test suite (TS) for its specification. A staff contact has been given the Action Item to plan its

expansion to a more comprehensive TS, by leveraging and integrating the large test collections of several early implementors. Rather than figure out the issues and write a Test Contribution & Review process from scratch, he looks at the summary advice in *The QA Handbook*. QAH points him both to some useful templates, and to more detailed stuff in *QA Framework: Test Guidelines [QAF-TEST]* significantly shortening completion of his action item.

1.2. Why QAH?

WG Chairs and staff contacts are overworked. They share a lot of the same concerns and pressures as specification editors.

Common problems are:

- never enough motivated people to do the work;
- deliverables delivered late;
- licenses and legal hassles;
- too much to do, so little time

A lot of groups have faced these issues, and there is a growing body of experience in W3C about what works and what doesn't. QAH aims to pull this together.

1.3. Audience and purpose

The *QA Handbook* (QAH) is intended for: chairs and staff contacts of W3C Working Groups. These include the process-savvy and novices alike.

QAH is a non-normative handbook about the process and operational aspects of the quality practices of WG life -- mostly test suite stuff, but also some specification quality assurance. Guidance in the QAH is supported by real-world stories and examples. It aims to flag avoidable pitfalls, and to provide techniques, tools, and templates that will facilitate and accelerate the work of the WGs.

Because there is no normative content in QAH, conformance to QAH is not an issue. QAH takes this approach for several reasons, chiefly:

- because of the diversity amongst W3C's working groups, it is difficult (but not impossible) to craft simple normative rules for all;
- as past experience has shown, imposing such rules in diverse, people-centric processes is often not well received -- too authoritarian and fierce.

Advice is presented in the imperative voice in *Principle* and *Good Practice* sections. The aim is to present helpful guidance gathered from the experience of W3C WGs. If it looks helpful, follow it; if not, don't -- there's no consequence.

Supportive

These are intended as suggestions rather than rules which are in general better to follow. The QA Handbook is a guide to help you work on W3C/2004/WG-qa-handbook-20040510/We work on W3C/2004/WG-qa-handbook-20040510/

1.4. QAH scope

The *QA Handbook* (QAH) is a practical guide for integrating quality practices into the WG. The main focus is on things that influence the development and implementation of specifications and tests, especially:

- people resources;
- deliverables and their schedules;
- interaction with W3C and the world;
- W3C process, licenses, IPR, etc.

However, the scope is not limited to specifications and tests, but includes the total environment in which the WG operates. The goal of QAH is to capture and share current good practices, point out hazards along the way, and suggest new modes of operation to help the WGs pursue their missions in the most timely and effective ways.

1.5. Other QA Framework resources

Editors, test builders, and general WG membership will find advice specific to their roles in the other parts of the *QA Framework*:

- *QA Framework: Specification Guidelines [QAF-SPEC]*
- *QA Framework: Test Guidelines [QAF-TEST]*

Chairs and staff contacts will likely also get involved with these eventually. A brief orientation to the rest of the *QA Framework* is provided in an appendix to this document.

1.6. Roadmap to the rest of QAH

After this orientation section, QAH contains four topical modules:

- **Early planning and commitment**
- **Day-to-day QA operations**
- **Licensing & branding**
- **Acquiring test materials**

Each presents advice and guidance about some part of the WGs test and quality activities. These tend to have a chronological correspondence to phases (rec-track stages) of the WGs activities. Earlier is better, but later is better than never. Here's a graphic depiction of when, in a WGs life, the various QAH topics are ideally dealt with and applicable:

TTBD. Here is planned to be embedded a chopped down version of the *OpsGLchronology diagram*

perhaps we've want to be more in QAH scope. QAH will be a good reference for chairs and staff contacts. QAH is a good reference for chairs and staff contacts. QAH is a good reference for chairs and staff contacts.

However, each suggestion should be dependent on the situation & a WG. http://www.w3.org/TR/2004/WG-qa-handbook-20040510/ 12/05/2004

2. Early planning and commitment

Story:

The Xyz Working Group launched a intense test effort late in its spec development. During Candidate Recommendation (CR), the still-growing Test Suite (TS) kept flushing out ambiguities and flaws in the spec. Xyz10 cycled multiple times in CR, in part because of (beneficial!) changes from the TS/spec-revision iteration. For Xyz20, the WG decided up front that any functionality proposed for inclusion had to be accompanied by test cases.

Principle:

Plan for and commit to the Working Group's QA deliverables as early as possible.

Why care? It's not always easy to anticipate Working Group (WG) needs during the rush and pressure of Chartering, or in the busyness of early WG life. But the earlier the WG can accurately identify and commit to its test and other quality related deliverables, the less likely that the WG get big surprises later on, or run into problems that will delay its progress towards Recommendation.

Additional reason -- binding decisions about WG membership (e.g., numbers per company) often are made at Charter time.

What does this mean? In practice, this means attention to a handful of points, which we enumerate as Good Practices.

Good Practice:

Decide ASAP -- will the Working Group build test materials or acquire them?

Clearly, it is going to make a big difference in a Working Group's (WG) staffing requirements -- building test materials tends to be labor intensive (extremely so for some types of specifications). Even if the WG imports them, some staff resources will have to be applied (see last module). The particular test-related activities and milestones in the WG's programme of work will in general be completely different for develop versus acquire options.

Good Practice:

Think about and enumerate the QA activities & deliverables that might help the Working Group through the Recommendation track. Minimally, commit to assuring the timely existence of test materials.

Different kinds of QA deliverables might include:

- *tasks of new, changed, or work. In a*
- basic test suites
- validators
- test assertions enumeration
- one or more spec quality reviews (using *Specification Guidelines* [QAF-SPEC])
- comprehensive test materials (beyond basic coverage)
- [other suggestions?]

Test materials are by far the most common QA deliverable, and likely will be a key to quick and painless passage through Candidate Recommendation (CR).

Good Practice:

Synchronize QA deliverables with specification milestones, and for the bigger QA deliverables, define and schedule intermediate milestones if possible.

This advice echoes that in *Tips for Getting to Recommendation Faster* [REC-TIPS] for example see item #6 in section 2.

Good Practice:

Consider whether the Working Group should tie any quality criteria to Rec-track advancement.

For example, finishing test materials deliverables before requesting Candidate Recommendation (CR) is common, in order to facilitate CR's Implementation Assessment. (Counter-example: as in the above Story, if the WG is still building them during CR, it is likely to uncover things that will oblige it to cycle in CR.)

This good practice takes the synchronization of the previous one a step further - the specification cannot advance unless the committed test or other quality criteria are met.

How to Organize a Recommendation Track Transition [TRANSITION] talks some about the role of test suites in advancement decisions.

Good Practice:

Put some thought into how to staff the WG's QA plans.

The earlier this is done, the more options will be available. Some options include:

Lab at Shawnee Hill

- dedicated team from Working Group (WG) membership;
- part of everyone's time;
- Consider: asking in Call for Participation (CFP) for extra people who would specifically be tasked to work on QA deliverables.

The third option isn't really different from the first. It's just a way of doing it. But notice that it's an option that is only available by looking into these questions at Charter time.

By the way, there has been confusion [TBD: find the chairs archive reference] about "W3C Process, only allows each company to have two members on the WG". In fact, that is not from W3C Process. W3C Process gives considerable freedom for this to be tailored to WG needs -- W3C Process says it may be specified in the Charter. So, for example, the WG could decide on these rules: allow two per company in technical discussion, issue resolution, voting, etc. and, allow additional dedicated test suite builders.

By the way, this is another good reason to put some thought into test suite plans and other quality-related deliverables as early as possible.

Tips for Getting to Recommendation Faster [REC-TIPS] (section 3) also talks some about the value of (early) staffing decisions.

Examples:

- [TBD: initially get some existing examples from OpsQL/ET and Intro]
- [TBD: during reviews, explicitly solicit good examples and counter-examples]

How can I do it?

- The Charter template provides for a superset of the things that one might want to specify and commit to early (at Charter time). Use it for those items that are deemed appropriate to write it into the WG's Charter.
- Having advocated "earlier is better", now is a good time for QAH to acknowledge that Charter time may not be appropriate for each and every of the above Good-Practice recommendations, for every WG. In some cases, it might be premature to commit to that level of detail at that early stage of the WGs life.

Related:

- A number of the topics in this module are mentioned also in Tips for Getting to Recommendation Faster [REC-TIPS].
- QA Framework: Spec Guidelines talks about utility of the TA-list deliverable, as well as methodical spec reviews, for spec quality control
- QA Framework: Test Guidelines [QAF-TEST] talks about types of test suites, automation, test assertions, etc -- a shopping list of QA deliverables.
- How to Organize a Recommendation Track Transition [TRANSITION] is

related.

3. Day-to-day QA operations

Story:

After doing it up front in one of its first TM development efforts, a test development team was so convinced of the value of a good QA Process Document (QAPD) that, in its several subsequent W3C test development efforts, one of the first things it did was copy-paste-edit a previous QAPD for the new effort's QAPD.

Principle:

In one place, collect all of the information needed to define the Working Group's work processes, inform others how to communicate with the Working Group on QA topics, and direct everyone how to find and use its QA resources.

Why care? Over and over we hear the message from successful test suite projects -- define the work process early: test dev't framework, issues list, email list, faq, contribution & review process, etc. [Examples TBD: DOM, Xquery, maybe SVG...]. Conversely, there are examples of disorganized collections of test cases with no one apparently in charge, no way to find their status, correctness. [Example TBD: find KD's counter-example of "can't find anyone who's responsible for amorphous undocumented heap of "tests"?]

The W3C Process Document clearly organizes the way that a WG's specs are progressed through the Rec track. But there is no similar template for the other aspects of a WG's life, particularly aspects related to aligning test and quality processes -- logistical setup, communications with the outside, licensing and branding policy, test development process, etc.

Good Practice:

Put all of the Working Group's important test and QA-related information in one place in a QA Process Document (QAPD).

How can I do it? Simple: Use the QAPD template. It will guide the user through everything needed, and then some. It is not only a template, but also a checklist of sorts, for the sort of things that the Working Group (WG) should consider having in its QA Process Document. The QAPD template has been assembled as the union of good practices seen in real QAPDs of W3C Working Groups.

In the past, before the construction of the QAPD template, test efforts would often copy-edit a QAPD from another effort. There isn't really any reason to do this anymore. Here are some examples from which the QAPD template has been assembled:

- [TBD: example1]
- [TBD: example2]
- ... etc...

What does it mean? In practice, it means (easiest solution) producing a QAPD recording at least those details of the WG's test- and QA-related work processes that are outlined in the QAPD template and briefly discussed in the following subsections.

3.1. General modus operandi

See the corresponding section in QAPD template.

Good Practice:

Identify a Working Group point-of-contact about test materials or other QA-related business.

This can be a special appointed "QA Moderator". Or it might be the WG Chair (or a co-chair), or staff contact. The important part is that there be a single identified point-of-contact to whom others can address questions, contributions, etc, and who will be accountable for responding.

See corresponding QAPD subsection.

Here are a couple of TBD: Example(s).

Good Practice:

Specify an archived email list to use for QA-related communications (test suite questions, bug reports, contributions, etc).

It can be a dedicated "Test" list. Or it can be a public Interest Group (IG) list. Or it can be a public comment list separate from the WG list, in the case that there isn't an IG. Because of the variety of public/private mixes amongst W3C's WGs, "one size fits all" does not work well here.

Here are a couple of TBD: Example(s).

See corresponding QAPD subsection.

Good Practice: Identify Web page(s) for test suites, announcements, and any other QA-related deliverables.

Obviously, this needs to be publicly accessible. Doing it all in the public portion of the WG's Web space is one way to achieve that. In particular, that provides a good, secure repository location for test materials.

Some WGs [Example: @@SVG] have two locations actually -- a private CVS repository for the in-development test materials, and a simplified public repository for periodic public releases of test materials.

Here are a couple of TBD: Example(s).

See corresponding QAPD subsection.

The Working Group's QAPD is also a handy central location to record its licensing policies and (any) branding policies. These are sufficiently important that they have their own QAH module, which addresses:

- license terms applicable to test materials, both submitted and published;
- any branding policy -- logos, conformance icons, etc -- and associated rules and restrictions.

3.2. Test development framework and processes

[Ed TBD. The QAPD subsection references in this section need to be refined more precisely.]

If the Working Group (WG) is developing test materials itself, then there are several topics associated with TM development process are going to impact its operations and management. These are described, along with *Principle* and *Good Practice* guidance, in some detail in *QA Framework: Test Guidelines [QAF-TEST]*. These topics, which might conveniently be documented in the WG's QAPD, include definitions of:

- development framework [QAPD subsection]
- test materials contribution and review process [QAPD subsections]
- test materials publication [QAPD subsection]
- testing and test results promotion [QAPD subsection]

3.3. 3.3 Life after WG -- maintenance

Finally, as a part of planning about "life after WG", the Working Group (WG) will need to decide what happens to both its test materials and associated processes. These maintenance-related topics are described in some detail in *QA Framework: Test Guidelines [QAF-TEST]*, but again the information might conveniently be located in the WG's QAPD.

- what happens to the test materials themselves?
- what happens to the WG's contribution and review processes? [QAPD sub-section]
- how to track errata and (for example) new specification editions? [QAPD sub-section]
- what happens with bug reports about the test materials? [QAPD sub-section]

Related:

- *QA Framework: Test Guidelines* [QAF-TEST] -- it talks about test-specific processes, so QAH mostly doesn't. Nevertheless, placeholders for these are found in the QAPD template
- License & branding module

Success criteria:

- The QAPD template is filled out and posted on the WG's web site. (Not only for the focus topics of this module, but also the other related topics of Testlite and the licensing & branding module.)

4. Licensing & branding

TBD: Cartoon?

Story:

Xxxxxx WG has a great collection of test cases, but they can't agree now on publication licenses that are acceptable to everyone, and so they are stalled while they work it out.

Principle:

Get agreement up front about IPR and License issues around planned test materials.

Why care? Get it right early, or it may stall the Working Group's Rec-track progress indefinitely. While this might seem to be a routine piece of Day-to-day operations, it has proved to be sufficiently troublesome within W3C that it deserves to be a Principle by itself.

What does this mean? There are two kinds of licensing issues: submission license, and publication license. Both of them can be problematic and can interrupt the WG's progress on Rec-track if not early addressed and carefully handled. Test materials license and other IPR issues are the subject of ongoing debate and discussion within W3C, but there are some tactics to minimize

potential problems.

Good Practice:

As early as possible, get WG consensus and define acceptable license terms for submission of test materials.

W3C currently has a more or less routine submission license, *Contribution of Software or Test Materials to W3C* [CONTRIB]. By early attention, it should become clear whether any potential sources require custom terms, before possible disputes can impact the WG's deliverables and schedules. Cases are known where potential submitters would not accept the standard terms, and custom terms had to be negotiated.

- [TBD Example: need someone to contribute one. JR is gone.]

Good Practice:

As soon as the nature of the Working Group's test materials becomes clear, get consensus and define license terms for publication of the test materials.

Any W3C-hosted materials must have approved license and use terms. Experience has shown that there is no single license that is appropriate for all test materials, so the WG needs to address this after it has come to an understanding of the structure, content, and intended use of its test materials.

Currently approved W3C licenses that may be applied to test materials are the Document License and the Software License. The Document License has two characteristics that are attractive for test materials:

- It prohibits the test materials from being modified by the user upon download, therefore guaranteeing the integrity of the test materials;
- It requires that if the test materials are copied or redistributed, they must contain the link to the original test materials and their status.

On the other hand, there are situations in which the Document License is inappropriate, because (for example) some Test Materials require modification or completion in order to apply them.

In some cases, one license may seem appropriate for some parts of Test Materials, but the other license better for different parts. Test Materials might contain some mixture of these components: test software, test documentation, and test cases (see *Test Guidelines*[QAF-TEST]?). A careful look at contents and use cases may reveal that different licenses to different components is the best solution.

If the WG considers that neither the Document License nor the Software

*Copy
Phase
1*

License is applicable, not even piecemeal as just described, it should consult with W3C Legal.

Good Practice: Consider whether to have brands, logos, or conformance icons associated with the Working Group's test materials. Define associated policies.

[TBD] Points to develop about logos policy: terms for valid application, conformance claims, challenge procedures, policing & enforcement policy, etc. Some of these start to border on significant legal questions.

[TBD] Reference to and discussion about *W3C Logo and Icon Usage*, and maybe also SpecLite material about Conformance Claims.

- The decision ultimately belongs to the Working Group. [TBD. Actually, we can go through a lot of the things about Doc vs. SW, applying different licenses to different bits, etc]
- There are places in QAPD template to document the WG's decisions, about licenses as well as branding/logos.
- Don't forget to make license stuff obvious and visible in all deliverables (and all their bits and pieces)!

Examples:

[TBD. Should be easy to come up with a handful of good examples. Especially for brands/logos, WAI, W3C content validators, etc]

Related:

- There is an extensive history of TM license issues within QA.
- A 2003 ad-hoc task group generated a succinct issue summary (member-only).
- a final report of sorts (member-only) documented issue resolutions acceptable to the ad-hoc task group participants.
- *W3C Logo and Icon Usage* summarizes key policy details for existing W3C conformance icons.

Caveat: This is still an active issue and topic within W3C. Some of these references in this present QAH version may be superseded by future, newer advice or policies.

5. Acquiring test materials

Story:

An external organization built a test suite for Abc 1.0. The Abc Working Group had no test suite, no effort in progress, and no resources to staff a from-scratch effort. The external organization had no resources to continue maintaining the test suite. With QA staff moderating, several months of sorting the details led to a win-win agreement to transfer the Abc 1.0 test suite to the Abc working group. The test suite got a secure repository within W3C, was published for public use, and was given adequate maintenance resources.

Principle:

The Working Group can save a ton of work by acquiring a test suite, but be ready to address and resolve many of the same issues as build-your-own scenarios.

The big-three problems are:

- IPR issues
- staff resources
- quality of the candidate materials

The IPR and staff issues are similar in concept to what the Working Group faces if builds build the TM, but probably lesser in degree. A pre-transfer quality assessment might seem unique to the acquire option, but the actual steps will probably look similar to a test case contribution/review process in a build-your-own scenario (see *QA Framework: Test Guidelines [QAF-TEST]*).

Good Practice:

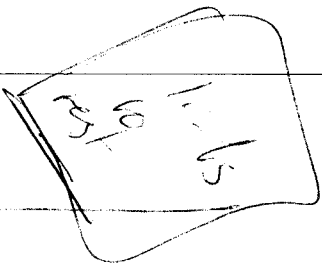
Do a quality assessment of candidate test materials before going any further.

Basic things that a good quality assessment might cover would for example include: clarity of scope, traceability, atomicity, user documentation, etc.

A more comprehensive list of things that an assessment process could cover might include: correctness, traceability, atomicity, user documentation, maintainer documentation, declaration of scope, completeness (vis a' vis declared scope), harnesses or interfaces for application of the TM, reconfigurability, results assessment, results recording & reporting, automation features, versioning/errorata support, declaration of publication licenses, integrated submission procedures, etc."

QA Framework: Test Guidelines [QAF-TEST] deals with this topic in much more detail, including (planned) templates and assessment aids.

Examples:



- The SVG test suite manual contains a chapter listing test review guidelines.
- Some of the CSS test authoring guidelines can also be turned around and used as assessment criteria.

Related:

[TBD. There was a recent www-w3.org dialog about "testing a test suite". Might make an interesting reference.]

Good Practice: Ensure there are adequate staff to support the transferred test materials.

A Test Materials (TM) manager is still needed, but total staff resources ought to be considerably less than build-your-own scenarios. With luck, the original TM manager of the external TM source might become a WG member after the test materials are transferred.

Good Practice: Sort out IPR issues with the external party that produced the test materials.

How can I do it?

This is a virtualization of an actual transfer scenario that QA helped to moderate. It could serve as a checklist of steps to consider for Working Groups taking the *acquire* route.

Legend: **EG** the external group or entity; **QAWG** the QA Working Group; **TM** the test materials; **WG** the Working Group acquiring the test materials.

1. Before the transfer, WG with the help of QAWG:
 - performs an assessment of the quality of candidate TM (by WG, QAWG)
 - identifies and commits to a set of test-related deliverables from the candidate TM. These could be: releases, appeal/challenge processes, maintenance plan, submission/review process, Web site, mail list, etc. (by WG)
 - identifies sufficient staffing, including at least a TM manager.

Recommendation: recruit the TM manager from the EG (if one exists) to become a WG member after the transfer. (by WG)

- makes the decision to seek/accept the transfer. (by WG)
- (potentially) initiates Charter amendment (by WG, QAWG may consult), if the TM acquisition doesn't fit within the current Charter.

2. During the transfer:
 - EG and W3C reach agreement to transfer the TM (by WG, QAWG, EG)
 - WG and EG perform the actual transfer of the TM, WG creates an initial repository (by WG, EG)
3. After transfer, initial test development/framework process setup:
 - WG appoints a TM manager.
 - The TM manager creates a QA Process Document for WG (by WG, TM manager, QAWG may consult)
 - set up the TM home page, a TM issues mailing list (by WG, TM manager)
 - determine the appropriate W3C IPR license (by WG, QAWG)
4. First W3C public release of the new TM:
 - make any needed enhancements prior to the first public release: fix known/reported errors, produce documentation (by WG), W3C license labelling, etc.
 - announce the first public release of TM (by TM moderator, Communications Group)
 - joint W3C/EG press release (by WG, QAWG, Communications Group, EG)
5. After the first public release, the TM enter the maintenance phase (see *QA Framework: Test Guidelines [QAF-TESI]*).

6. Appendix -- Orientation to QA Framework

6.1. Audiences for the QA Framework parts

The following list identifies the parts of the *The QA Framework (QAF)* that might interest those who fill the various roles within a Working Group (WG). While each part of QAF is targeted itself at a specific principal audience, the various parts might have somewhat broader interest and applicability.

all WG participants

For any (potential) WG participant, the early planning and commitment parts of *The QA Handbook* might provide helpful context for understanding what the WG has committed to deliver. Familiarity with the *Specification Guidelines [QAF-SPEC]* will be helpful to any participant who actively participates in the advancement of the WG's specifications to Recommendation.

WG spec editors and authors

As for all WG participants, *The QA Handbook* might be interesting, for shedding some light on the context in which the WG is operating. A good working understanding of the Principles and Good Practices of *Specification Guidelines* [QAF-SPEC], together with its collected examples, tools, and templates, should be a valuable resource in choosing document structure, formats, and techniques that will facilitate production of a high-quality specification.

WG chair

As the person ultimately responsible for all aspects of the WG's work, a familiarity with the guidance for operations and process of *The QA Handbook* (QAH) should be helpful -- Chairs and staff contacts are the principal intended audience of QAH. Some familiarity with the advice and guidance of *Specification Guidelines* [QAF-SPEC] and *Test Guidelines* [QAF-TEST] should be helpful as well, as the Chairs ultimately oversee both the advancement of the WG's specifications and the WG's test materials projects.

WG-TS participant

Those who are active in building the test materials of the WG should benefit from reading the guidance for test materials in *Test Guidelines* [QAF-TEST], and from its associated examples, techniques, and tools. Because of the close dependency of test materials on the functional specifications, a familiarity with the *Specification Guidelines* [QAF-SPEC] could be useful as well.

WG-TS moderator

The person who manages the WG's QA projects should have working understandings of guidance and techniques for specifications of *Specification Guidelines* [QAF-SPEC], as well as the test materials guidelines, techniques and examples of *Test Guidelines* [QAF-TEST]. In addition, the test-related process and logistical advice of *Test Guidelines* [QAF-TEST] should prove useful.

non-WG spec reviewers

Whether from other WGs, or the public at large, the *Specification Guidelines* [QAF-SPEC] will be helpful to those who review a WG's specifications, by providing some objective metrics by which to measure the specifications.

non-WG TM reviewers

Whether from other WGs, or the public at large, reviewers of a WG's test materials of a WG would benefit from a familiarity with *Test Guidelines* [QAF-TEST]. Its guidance and examples should facilitate a critical review of a WG's test materials.

Reviewers of Activity proposals & charters

For those W3C Members who will be reviewing Activity proposals and proposed WG charters, and helping to form their Advisory Committee Representative's positions, the early planning and commitment parts of *The QA Handbook* might be helpful in evaluating whether or not the WG's attention test and quality deliverables is appropriate and consistent with the WG's overall programme of work.

QA Activity participants

Participants in the QAWG are an expert resource for the W3C Working Groups, and accordingly should be expert on all parts of the *QA Framework*; participants in the QA Interest Group (QAIG) need familiarity

with all parts as well in order to effectively render some of the QAIG's chartered deliverables.

6.2. QA Framework Primer

TTBD. Could this section maybe be simplified further, turned into a checklist of sorts?]

TTBD. This section will need close coordination especially with *Test Guidelines*, when that is first published.]

This chapter, in the style of a primer, introduces the use of the QA Framework document family. It progresses through significant milestones in a WG's life, from writing a Charter through publishing Recommendations, and looks at associated test suite and other quality practice activities.

First Step -- QA Commitment

Because QA is properly an integral part of the activities of each WG, each WG has to consider and commit to a set of QA deliverables appropriate to its work. A spectrum of possibilities are discussed and illustrated in the early planning and commitment module of *The QA Handbook*.

If a WG is being newly formed, and if the WG is able to anticipate and agree at Charter time on deliverables like test suites, then it should consider documenting those QA deliverables in its Charter, just as it does all other WG deliverables. Again, see the early planning and commitment section of *The QA Handbook*. A WG being re-chartered is a similar case to a newly formed WG, although the scope and direction of its work might be clearer.

For an already-chartered Working Group undertaking new QA projects, if these deliverables are not documented in the Charter already, then there are a couple of options. The W3C Process describes how to amend a Charter to accommodate significant new deliverables, if the WG wishes to take this route.

Set Up Processes and Logistics

Once the Working Group (WG) is off and running, and assuming that it has planned on some test- or other quality-related deliverables, the next step is to choose and document the processes and logistics that it will use for its QA activities. These include such typical details as:

- QA moderator (single point-of-contact);
- "Test" home page in the WG's Web space;
- its email discussion list;
- WG process document for QA;
- decisions about IPR and test materials.

The sections within the Day-to-Day operations module of *The QA Handbook* give good-practice advice about how to do this, plus examples and a handy

None appropriate place
perhaps also shared done version

template for writing a QA Process Document.

Planning and Writing the Specification

There is a tight bond between how the specification (Recommendation) is written on the one hand, and on the other hand its testability and its suitability as a basis for interoperable implementations.

New specification. *QA Framework: Specification Guidelines [QAF-SPEC]* should be applied from very beginning. Among the key topics that it addresses are:

- conformance policy & clause;
- normative language throughout;
- writing with test assertions;
- optional features, discretion, extensions;
- profiles, levels, conformance claims.

Consider the advice of *QA Framework: Specification Guidelines [QAF-SPEC]* even at the stage of planning the structure and presentation style of the spec. Along with W3C "pubrules" and *W3C Manual of Style*, spec authors and editors should refer to the spec guidelines throughout their work, on topics like testable language, clarity, conciseness.

New Edition of specification. A new Edition of the same functional level of a specification is typically used for incorporation of errata (e.g., *XML 1.0 Second Edition*). Normally, this should not be considered a good time to align a specification to *QA Framework: Specification Guidelines [QAF-SPEC]* -- the changes associated with such alignment could significantly disrupt and restructure the specification.

New Version of specification. A new Version of the specification refers to a significant functional change and enhancement. This presents a good opportunity to improve the testability and implementability of the specification, as just described for new specifications.

Reviewing and Progressing the Specification

This stage in the specifications life has two significant aspects:

- the advancement of the specification to first public working draft (FPWD) and beyond;
- and the need to synchronize production of test suites and tools more closely with the spec progression.

When the specification is published in TR space, then non-WG W3C Members and the general public begin to review and comment. It would be valuable that such reviewers consult and understand the material in *QA Framework: Specification Guidelines [QAF-SPEC]* -- it gives and informed set of evaluation criteria about the conformance, testability, and interoperability aspects of the

specification.

Working Group (WG) participants and especially WG-TS participants should refer to the good-practice pieces about advancement criteria and synchronization (between specs and test materials) of *The QA Handbook*. Projects enter *The Matrix [MATRIX]* at Last Call Working Draft (if not sooner). A de-facto process convention is emerging, that there should be significant conformance test materials before finishing Candidate Recommendation phase. This timing coordinates with the explicit process requirement of two interoperable implementations.

Designing and Building Test Materials

There are several scenarios for how the Working Group (WG) "builds" its conformance test materials:

- design and build test cases and test tools in the WG, from scratch;
- import completed test materials from an outside group or organization;
- assemble the test materials from contributed test cases and materials.

Intra-WG build. Before starting the development, the WG-TS participants would benefit from a familiarity with the material in *QA Framework: Test Guidelines [QAF-TEST]*. There is useful information for both high-level planning -- e.g., does the WG want breadth-first Basic Effectivity or a fully detailed suite? -- as well as specific details for building the individual test cases. Another aspect of building test materials is an acceptance procedure for the individual bits, as they are built. This is addressed in the review-procedures guidance of *QA Framework: Test Guidelines [QAF-TEST]*.

Import completed test materials. Several high-quality test suites have been developed outside of the relevant W3C WG, and then transferred to the WG. WGs which are considering such a transfer should refer to test materials acquisition module of *The QA Handbook*. Clearly, the quality of the candidate test materials should be carefully assessed, and for this the *Test Guidelines* can provide useful assessment criteria.

Assemble contributions. Some test suites have been built by implementing processes to assemble significant chunks of material from outside (or internal member) contributions. Again, *The QA Handbook* test materials acquisition module addresses the steps needed to complete such a transfer -- they are the same as the preceding paragraph about transferring completed test materials. In addition, there should be careful quality assessment of contributions, for which *QA Framework: Test Guidelines [QAF-TEST]* can be helpful.

Publication of Test Materials

Typically, a Working Group TS group will want to publish releases of test materials, particularly as the specification advances through its final maturity levels (e.g., Proposed Recommendation) towards Recommendation. Test material publication is addressed in *QA Framework: Test Guidelines [QAF-*

TEST1.

One hurdle on the way to publication is legal -- deciding and agreeing on suitable publication licenses. Advice on navigating this potential quagmire is presented in the [licensing module of The QA Handbook](#).

As soon as the test materials become public, then there is definite need for a procedure to process challenges to correctness, make determinations, and appeal decisions. Test appeal process advice is presented in *QA Framework: Test Guidelines* [QAF-TEST1].

Publication of test materials often comprises an implicit (or explicit) invitation for contributions. The considerations described in "Assemble Contributions," are equally applicable here.

Specification Publication and Beyond

When the specification reaches Recommendation, there is typically a concurrent publication of the test materials. This might be considered a "final" publication, or ongoing development may still be planned according to one of the mechanisms discussed above. In any case, a maintenance procedure must be in place for the test materials. Firstly, there are tie-ins between approved specification errata and applicability of particular tests -- mechanisms for this are discussed in *QA Framework: Test Guidelines* [QAF-TEST1]. Secondly, there is the above-discussed need for both challenge/review/appeal processes. Finally, even if the Working Group ceases active TS development of test materials, it may want to continue to consider submissions, and review and integrate them per the test-contribution advice of *QA Framework: Test Guidelines* [QAF-TEST1].

Life after WG

It is possible that the Working Group (WG) and WG-TS may disband after its charter expires. The various aspects of this situation are introduced in *The QA Handbook*, and dealt with in somewhat more detail in *QA Framework: Test Guidelines* [QAF-TEST1].

7. Acknowledgments

The following QA Working Group and Interest Group participants have contributed significantly to the content of this document:

- Daniel Dardailier (W3C),
- Dimitris Dimitriadis (Ontologicon),
- Karl Dubost (W3C),
- Dominique Hazael-Massieux (W3C),
- Lofton Henderson (CGM Open),
- David Marston (Lotus Development Corp),

- Patrick Curran (Sun Microsystems),
- Lynne Rosenthal (NIST),
- Mark Skall (NIST),
- Andrew Thackrah (Open Group),
- Olivier Thereaux (W3C).

8. References**[PROCESS1]**

World Wide Web Consortium Process Document 1, Jacobs, Ed., 05 February 2004, available at <http://www.w3.org/2004/02/Process-20040205/>.

[CONTRIB1]

Contribution of Software or Test Materials to W3C, which defines W3C-approved procedures and terms for submission of Software and Test Materials, available at

<http://www.w3.org/Consortium/Legal/2002/contribution-grant-20021231>.

[DOM Working Group TS1]

DOM TS Process Document, D. Dimitriadis, Ed., 15 January 2002, available at <http://www.w3.org/2002/01/DOMConformanceTS-Process-20020115>.

[MATRIX1]

QA Matrix...blah...blah...

[PROTOCOL-WG-TS1]

The XML Protocol WG has a TS process document, available at <http://www.w3.org/2000/xp/Group1/10Its-contribution>, and a contribution/submission license (example of a submission legal notice), available at <http://www.w3.org/2001/10/test-materials-license.html>.

[REC-TIPS1]

Tips for Getting to Recommendation Faster, a public part of the (member-only) *W3C Guidebook*.

[QA-GLOSSARY1]

A comprehensive glossary of QA terms, maintained by the QA Working Group. (Incomplete version under construction at

<http://www.w3.org/QA/glossary>.)

[QAF-SPEC1]

QA Framework: Specification Guidelines, L. Rosenthal, Ed., future W3C Working Draft companion to this document, May-June 2004 anticipated first publication. When published, it will be a light-weight revision of the previous (Candidate Recommendation) *Specification Guidelines* collection of documents.

[QAF-TEST1]

QA Framework: Test Guidelines, P. Curran, D. Dimitriadis, Eds, future W3C Working Draft companion to this document, May-June 2004 anticipated first publication. ~~When published, it will be a light-weight revision of the previous (Candidate Recommendation) Test Guidelines collection of documents.~~

[QAWG1]

Quality Assurance Working Group of the W3C QA Activity, which may be found at <http://www.w3.org/QA/WG/>.

[SCHEMA-WG-TS]

The XML Schema WG has a TS process document, available at <http://www.w3.org/2001/05/xmlschema-test-collection.html>, and a contribution/submission license (example of a submission legal notice), available at <http://www.w3.org/2001/05/test-materials-license.html>.

[TRANSITION]

How to Organize a Recommendation Track Transition, a part of the Member Guide (member-only), is available at <http://www.w3.org/2004/02/02-transitions>.

9. Change History

2004-05-10, First Published Working Draft

Combines the best features of the former *QA Framework: Introduction and QA Framework: Operational Guidelines* into a lightweight, non-normative handbook for W3C Working Group chairs and staff contacts.

