WAI-Tools Project, Advanced Decision Support Tools for Scalable Web Accessibility Assessments, drives innovation with sustainable impact on the entire field of web accessibility evaluation and repair through:

- Building on on-going international standardisation efforts on web accessibility conformance testing;
- Ensuring consistent accuracy across automated, semi-automated, and manual accessibility testing;
- Pursuing leading edge technologies for website testing, including dynamic and mobile applications;
• Leveraging the existing market of commercial, free, and open source accessibility evaluation tools;
• Demonstrating large-scale accessibility monitoring built on open standards and open source tools.

WAI-Tools achieves this by carrying out key efforts in the vendor-neutral environment of the World Wide Web Consortium (W3C). WAI-Tools draws together expertise from industry, public bodies, and research to develop common understanding of web accessibility requirements in exchange with the existing community and networks of the W3C Web Accessibility Initiative (WAI).

WAI-Tools maximises the impacts while minimising the use of project resources by building on existing open source tools from leading market vendors, rather than investing in teething troubles of less mature tools. WAI-Tools deploys testing tools in existing accessibility monitoring observatories and integrates these differing national approaches using open data, to demonstrate easier and more cost effective assessment of web accessibility requirements, at scale.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

During this initial stage of the project, key results were achieved towards building open, transparent, and widely accepted test rules across fully-automated, semi-automated, and manual implementations. This includes the following results from the project:

• Development of 36 test rules following the latest draft of the W3C Accessibility Conformance Testing (ACT) Rules Format 1.0. These test rules have been implemented by Siteimprove and Deque, validated on a selection of existing websites, and reviewed by the broader community involved in the W3C work on Accessibility Conformance Testing (ACT). These test rules are now sufficiently mature to be suggested to the W3C Accessibility Guidelines Working Group (AGWG), for formal approval and publication as authoritative ACT Rules from W3C. These test rules are available from the W3C ACT Rules Community Group (CG): https://act-rules.github.io/rules/
• Development of an open data format for reporting test results, to facilitate the exchange and the comparison of results from different implementations of test rules (automated tools and manual methodologies). This open data format is based on the W3C Evaluation and Report Language (EARL) 1.0 using a JavaScript Object Notation (JSON) serialisation. This data format is currently implemented by Siteimprove and Deque, and is being implemented in the W3C WCAG-EM Report Tool to support manual methodology developers. This open data format is publicly available from the W3C GitHub repository, for open use by the community: https://github.com/w3c/earl
• Development of authoritative guidance from W3C on developing accessibility statements, that is accompanied by a generator tool to help website owners to create accessibility statements. This guidance and generator tool highlights some of the requirements for public bodies in Europe that adhere to the EC Directive on Web Accessibility. At the same time, it is equally suitable for other public and private entities from around the world, who may not be formally required to provide accessibility statements but who may want to follow good practice. This guidance and generator tool is provided from the W3C/WAI website: https://w3.org/WAI/planning/statements/
• Helping to establish and support a community around W3C work on Accessibility Conformance Testing (ACT), to help ensure sustainability of this effort beyond the lifetime of this project. This includes actively reaching out to the community and engaging in dialog and exchange. Foremost, this includes developers of automated tools and manual methodologies but also researchers and policy makers as well as user organisations relevant to the project. The project carried out “Open Meetings”
with the community (including physical and virtual), contributed research papers, and participated in numerous events to promote the work of the project and the W3C work on ACT.

Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

The WAI-Tools Project aspires to the ambitious goal of advancing the entire field of web accessibility evaluation and repair, and thereby help advancing web accessibility generally from the bottom up. Specifically, WAI-Tools aims to address many of the core criticisms from researchers and practitioners regarding web accessibility evaluation and repair tools by building a foundation of transparency and trust. This provides a common basis and platform for building innovative products and services that advance the current state-of-the-art, which is essential to help make the web accessible to people with disabilities. Some of the specific results expected until the end of the project include:

• Promote common understanding of accessibility – by documenting test procedures in form of ACT Rules, the project contributes towards more transparency and openness in web accessibility testing. Implementation, validation, and comparison of these test rules in the consensus process of W3C leads to more consistent understanding and interpretation of the underlying accessibility requirements. WAI-Tools Project is contributing an initial set of 70 rules to help initiate this broad international effort, and we are already witnessing the desired discussion and exchanges among different vendors from inside and outside the project during this initial stage of the project.

• Advance web accessibility evaluation methods – by providing open, reliable, and authoritative test rules, developers of web accessibility evaluation tools and methodologies can focus their effort on innovation beyond the current state-of-the-art. For example, recent advances in artificial intelligence and machine learning can help increase the level of automation in testing, provided that vendors can rely on a common interpretation of the requirements rather than needing to continually re-define their own interpretation without authoritative guidance from W3C.

• Improve interoperability in web accessibility – by ensuring consistent results from different tools and methodologies, website owners are not locked to particular vendors. Results from different sources and over time become more comparable, ensuring a more open eco-system for the Web. At the same time, developers of tools and methodology are continually encouraged to innovate, to maintain their customers and address their growing demand for interoperability.

• Contribute to open data on web accessibility – also by ensuring consistent results from different sources and over time, more comparable data on web accessibility can be made broadly available. For example, to support longitudinal and large-scale surveys across entire regions, such as the EU.

• Improve accessibility for people with disabilities – by improving accessibility testing tools and methodology, ultimately people with disabilities will benefit from a more accessible Web.

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