5. Quantitative Assessment

The quantitative assessment of the technologies based on the sub-criteria of Usability, Sustainability and Maintainability, is provided in *Table 6*.

Table 6: Quantitative Assessment

Sr. No.	Criteria	Sub-Criteria	EPICS	CSS	Remarks
		Usability			
1.	Ease of Understanding	High-level description of the software is available	Y	Y	NA
2.		Design rationale of the software is available	Y	Y	NA
3.		Architectural overview of the software, with diagrams, is available	Y	Y	NA
4.		Case studies of the systems built using the software are available	Y	Y	NA
5.	Documentation	Provides a high-level overview of the software	Y	Y	NA
6.		Documentation is available for the specific class of the users such as users, developers and so on.	N	N	The documentation is available for developers
7.		Documentation mentions clearly the pre-requisite to understand the document/ background and level of expertise required for the reader of the document.	N	N	NA
8.		Lists resources for further information (in case required) is provided in the document	Y	Y	NA
9.		Further information is suitable, for specific class of the user.	N	N	No user categorization
10.		Is the documentation task-oriented?	N	N	NA
11.		Does the documentation provide consistent, clear and step-by-step instructions to be followed?	N	N	Instructions are not clear and consistent. They can be misinterpreted by various developers/ users
12.		Does the documentation provide, the relevant examples with expected results for every step	N	Y	This is observed for few instances

Sr. No.	Criteria	Sub-Criteria	EPICS	CSS	Remarks
		being followed?			only
13.		For the problems and error messages being prompted to user, the possible causes and step-by-step solutions are provided	N	N	NA
14.		Documentation mentions the command names, syntax, and menus to be used	N	N	NA
15.		Complete API documentation with configuration files, property names and so on is available	Y	Y	NA
16.		Is the documentation available on the Software's web site?	Y	Y	NA
17.		Documentation on the web site makes it clear- what version of the document should be referred for a given version of the software	N	N	The software releases and documentation are out of sync
18.	Ease of building the Software	Web site has instructions for building the software	N	N	Instructions to build the custom version of Software are not available.
19.		Source distributions have instructions for building the software	N	N	
20.		Dependency Manager is used to automatically download dependencies the associated dependencies	N	N	
21.	Ease of Installation	Web site provides instructions for installing the software	Y	Y	Instructions are sometimes not adequate
22.		Web site lists all third-party dependencies, required for installing the software, that are not bundled, along with web addresses, suitable versions, licences and so on	N	N	Third party dependencies are not provided
23.		Dependency management is used to automatically download dependencies	N	N	Dependencies needs to be resolved manually
24.		All required third-party dependencies are available, for installing the software	Y	Y	NA
25.		All optional third-party dependencies are available, for installing the software	N	N	NA
26.		Tests are provided to verify if the installation has succeeded	N	Y	NA

Sr. No.	Criteria	Sub-Criteria	EPICS	CSS	Remarks
27.		All source and binary distributions contains instructions for installing/ getting the help and so on	N	N	Help is not included with the binary package
28.		All GUIs contain a help menu to see the software name, web site, where to get help, version, and so on	NA	Y	EPICS do not have GUI
29.	Learning Curve	A getting started guide is provided with basic examples for new users of the software	Y	Y	NA
30.		Instructions are provided for creating basic examples	Y	Y	NA
31.		Supporting instructions are provided for all basic example, shipped with software	N	N	NA
32.		Reference guides are provided for configuring the software	N	N	The documentation is observed erroneous at a times
33.		API documentation is provided for developers	Y	Y	NA
		Sustainability and Maintainability			
34.	Identity	Software has own domain name	N	Y	EPICS do not have separate website, but is hosted by other website (http://www.aps.anl.gov/epics/index.php)
35.		Software has a distinct logo	Y	Y	NA
36.	Copyright	Copyright information is provided on the software website	Y	Y	NA
37.		Web site mentions about the developer, maintainers and funders of the software	Y	Y	NA
38.	Open-source	Web site states licencing information	Y	Y	NA
39.		Software has an open source licence	Y	Y	For EPICS: EPICS open Source License For CSS: Eclipse Public

Sr. No.	Criteria	Sub-Criteria	EPICS	CSS	Remarks
					License
40.		Web site provides the list of important partners/ collaborators	Y	Y	NA
41.		Users exist who are not inventors of the software	Y	Y	NA
42.		Developers exist who are not inventors/ maintainers of the software	Y	Y	NA
43.	Accessibility	Binary distributions are available and can be accessed without any permission from the inventors of the software	Y	Y	NA
44.		Source distributions are available for free of cost	Y	Y	NA
45.		Source code repository of the software can be accessed anonymously	Y	Y	NA
46.	Portability	Application can be built using the software which can run on Windows operating system	Y	Y	Emulator is required
47.		Application can be built using the software which can run under UNIX/Linux operating system	Y	Y	NA
48.		Web site has information on, how to get the support.	Y	Y	NA
49.	Technical Support	User documentation describes how to get support	Y	Y	NA
50.		E-mail lists or forums, gets regular posts from the developers/ users	Y	Y	NA
51.		Source code of the software is well structured into modules or packages	Y	Y	NA
52.		Software has a IDEs for string the project files	N	Y	EPICS do not have IDE
53.	Analysability	Source code of the software is well commented	N	N	Comments are not adequate
54.		Source code is well laid out and indented	Y	Y	NA
55.		Source code uses meaningful class, variable names and so on	Y	Y	NA
56.		Coding standards are recommended by the software	N	N	NA

Sr. No.	Criteria	Sub-Criteria	EPICS	CSS	Remarks
57.		Coding standards are required to be observed, while working with the software	N	N	NA
58.		Contributors can retain the copyright/IP of their contributions	N	N	NA
59.	Obsolescence	Web site describes the roadmap or plans or milestones of the software	Y	Y	For EPICS: https://launchpad.net/epics-base For CSS: https://docs.google.com/spreadsheet/ccc?key=0AvikNAN_jxjPdG5VSFBkbjJDQml0Rjk0SG53eEUwbUE&usp=sharing#gid=0
60.		Software uses open standards	Y	Y	Both uses CA, which is built on TCP and UDP