Appendix A: Uptime Reporting Field Requirements

Field Name	Data Source Inventory Content Description	Accepted Data Format	Content Required
Uptime_Reporting_Start	Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.2 DateTime Section 16.2) identifying the start date of the reporting period for port uptime, total outage, and total excluded outage.	Reported as type: DateTime *Example*: 2023-07-03T12:51:48Z Unit: UTC	Required
Uptime_Reporting_End	Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.2 DateTime Section 16.2) identifying the end date of the reporting period for port uptime, total outage, and total excluded outage.	YYYY-MM-DD HH:mm:ss in UTC Reported as type: DateTime *Example*: 2023-07-03T12:51:48Z Unit: UTC	Required
Uptime	The uptime of a port (port ID) is the time over the previous twelve (12) months when a charger's hardware and software are both online and available for use, or in use, and the charging port successfully dispenses electricity in accordance with requirements for minimum power level. 23 CFR 680.112 and 23 CFR 680.116(b) requires that port uptime be calculated on a monthly basis for the previous twelve months, in accordance with the equation in 23 CFR 680.116(b)(3) for each month of the reporting period: $\mu = ((525{,}600 - (T_{outage} - T_{excluded})) / 525{,}600) \times 100$ Where: μ = port uptime percentage for a given port ID T_{outage} = total minutes of outage for the port ID in previous year $T_{excluded}$ = total minutes of outage for the port ID in previous year for reasons outside the charging station operator's control. Reasons for outage outside the charging station operator's control provided that the charging station operator can demonstrate that the charging port would otherwise be operational may include but are not limited to: electric utility service interruptions; failure to charge or meet the EV charging customer's expectation for power delivery	Numeric value equal to or greater than zero and equal to or less than 100 and specified to at least two (2) decimal places Reported as type: Decimal (5, 2) *Example*: 98.23 0.00 100.00 Unit: Percentage	Required

	due to the fault of the vehicle; scheduled maintenance; vandalism; or natural disasters. Also excluded are hours outside of the identified hours of operation of the charging station. Port uptime must be calculated as a rolling, annual percentage according to the above formula that is updated each month.		
Total_power	The total maximum power output rating of the Data Source in kW (to at least one decimal place), when the maximum number of ports are in use, where applicable.	Positive Decimal Number	Required
Total_Outage	The total time (in minutes) over the previous 12 months during which the charging port (port ID) did not successfully dispense electricity as expected. This corresponds to the T_outage value in port uptime formula in 23 CFR 680.116(b).	Numeric value equal to or greater than zero and specified to at least two (2) decimal places Reported as type: Decimal (6,2) *Example*: 50.25 0.00 8760.00 Unit: Minutes	Required
total_outage_ excl	The total time (in minutes) over the previous twelve (12) months during which the charging port (port ID) did not successfully dispense electricity as expected for reasons outside the charging station operator's control, provided that the charging station operator can demonstrate that the charging port would otherwise be operational: electric utility service interruptions, failure to charge or meet the EV charging customer's expectation for power delivery due to the fault of the vehicle, scheduled maintenance, vandalism, or natural disasters. Also excluded are hours outside of the identified hours of operation of the charging station. This corresponds to the T_excluded value in port uptime formula in 23 CFR 680.116(b). Charging station operators should be able to demonstrate that the charging port would otherwise be operational.	Numeric value equal to or greater than zero and specified to at least two (2) decimal places Reported as type: Decimal (6,2) *Example*: 50.25 0.00 8760.00 Unit: Minutes	Required

Outage_Id	Timestamp uniquely identifying a single instance of an outage for a given charging port (port ID). An outage is any period of time during which a charging port cannot successfully dispense electricity as expected. Outages must be identified regardless of whether their occurrence is for reasons outside of the control of the charging station operator (see outage and excluded outage data attributes for details). The outage_id should follow RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime type.	YYYY-MM-DD HH:mm:ss in UTC datetime Reported as type: DateTime *Example*: 2023-07-03T12:51:48Z Unit: UTC	Required
Outage_ Duration	Length of time (in minutes) during which the charging port (port ID) could not successfully dispense electricity as expected. Outage duration must be reported for each outage instance (outage ID) and measure the duration of the entire outage, starting from initial disruption in electricity being dispensed as expected to when charging port is able to dispense electricity again successfully.	*Example:* 120.55 Unit: Minute	Required
Outage_ Count	The number of Outages recorded by the Data Source during the reporting period.	Non-Negative Integer or <NULL> if not known	Optional
[Additional fields]	Additional fields are welcome and may be provided at the discretion of the Reporting Entity.	Multiple	Optional