

EV Charging Patent Portfolio License Cross-Reference Chart

(The following chart shows illustrative essential claims for each patent.
Other claims may also be essential and/or other portions of the Standard may be covered.)

Ctry.	Patent	CI	Standards / Sections
AT	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
AT	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
BE	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
BE	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
BG	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
CH	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
CH	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
CH	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
CN	102341990	1	IEC 61851-1:2017, Secs. 3.1.12, 3.5.2, 6.2.4, Fig. 3 IEC 61851-23: 2014, Sec. 3.101, Annex CC, Figs. CC.1, CC.6, Tables CC.3, CC.5, D.1 ISO 15118-1:2013, Sec. 3.26, Fig. A.4
CN	102647000	1	ISO 15118-2013, Secs.1, 5.5.2 ISO 15118-2:2014, Secs. 8.4.3.9.3, 8.5.2.15, 8.5.3.3 IEC 62196-2:2011, Secs. 5, 5.2, 6, 6.5
CN	102761156	1	GB/T 18487.1:2015, Secs. 2, 3.4.1, 5.2.1.1, A.1.1 IEC 61851-23: 2014, Sec. 6.4.1, pg. 11-12, Secs. 6.4.3.102, 6.4.3.114, Table CC.5, Fig. CC.6 ISO 15118-1: 2013, Sec 5.5.2
CN	102810858	1	GB/T 18487.1:2015, Secs. 2, 3.1, B.1, Fig. B.1 IEC 61851-23:2014, Sec. 2 ISO 15118-1:2013, Secs. 6.1, 3.17, 3.48, 5.4, 7.5.2, 7.6.2, 7.8.2, Fig. 1, Tables 1, 8, 13 ISO 15118-2:2014, Secs. 2, 3.35, 8.4.5.4.2, 8.5.2.10, E.2.1

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Ctry.	Patent	CI	Standards / Sections
CN	102870307	1	IEC 61851-1: 2017, Secs. 3.1.1, 3.1.4, 3.1.5, 3.1.11, 3.3.3, 3.3.5, 3.5.9, 3.5.10, 9.3, Figs. B.2, C.5, Table B.2, Annexes B.2 and C.3, ISO 15118-2: 2014, Secs. 1, 3.11, 3.38, 7.4, 7.5, 7.6.3.2, 7.8.1, 7.10.2, 8.4.3.8.3 ISO 15118-3: 2015, Secs. 3.10, 3.11, 3.13, 3.16, 3.17, 3.18, 5.3, 6.1, 6.2, 6.2.2, 7.3, 7.3.1, 9.5, 12.1, 12.2, Annex A.9.4.1, A9.5.3.2, A9.5.3.3
CN	103023093	1	GB/T 18487.1:2015, Forward, App. B, Fig. B.2, IEC 61851-1: 2017. Secs. 1, 3.3, 3.4, Tables A.5, A.6 ISO 15118-1: 2013, Secs. 1, 3, 3.25, 3.9, 5.4, 7.6.2, Table 13 ISO 15118-2:2014, Sec. 8.4.3.8.1
CN	103648828	1	IEC 61851-1:2017, Figs. 1, 2, 3 IEC 61851-24:2014, Tables A.1, A.7 SAE J1772:2017, Figs. 7, 8, 12, 13
CN	103930297	1	IEC 61851-23:2014, Table D.1, Fig. AA.1 SAE J1772:2017, p.29-30, Figs. 7-8:Control Electronics, p. 63/116 "PEV Scheduled Charge", "phone app"
CN	103959590	1	IEC 61851-1:2017, Secs. 6.3.1.6, 13.1, D.8.2.4, Figs. C.2-C.5, Table D.18 SAE J1772:2017, Sec. 5.3, Figs. 5, 7, 8, 10, 12, 13, Table 9
CN	104002691	1	GB/T 18487.1:2015, Secs. 2, 3.4.1, 3.4.9-3.4.11, 5.2.2.3, 9.6, App. B, Tables A.7, B.2 (Sequence T19-T21) GB/T 20234.1:2015, Sec. 6.3.3, Fig. 1 IEC 61851-23:2014, Sec. 2 ISO 15118-1:2013, Sec. 3.14 ISO 15118-2:2014, Sec. 8.6, Fig. 96
CN	104203636	1	IEC 61851-1:2017, Sec. 8 IEC 61851-23:2014, Figs. AA.2, BB.1 SAE J1772:2017, Figs. 5, 7, 8, 10, 12, 13, 22, 23
CN	105075059	1, 2, 3, 8	ISO 15118-1, Secs. 3, 3.24-3.26, 3.35, 3.52, 3.58, 6, 6.1 ISO 15118-2, Secs. 3, 3.23, 8, 8.4, 8.4.3.8.3, 8.4.3.9.3, 8.8.4.1, 8.7.4, 8.7.4.1, 8.8, 8.8.4.1, 8.8.4.2.3; Annex I, I.1, I.2, and Figs. I.1 and I.2
CN	105922883	1	IEC 61851-23:2014, Table D.1, Fig. AA.1 SAE J1772:2017, p.29-30, Figs. 7-8:Control Electronics, p. 63/116 "PEV Scheduled Charge", "phone app"
CN	107848432	1	SAE J1772:2017; pp. 33, 35, 60, 80; Figs. 10, 12; Secs. 5, 5.1, 5.3, 6, 6.1 and 6.2.2.6; Appendices E, F; Tables 9 and 12. J2847-2 Sec. 1, p. 3.
CN	102574476B	1, 17	IEC 61851-1:2017, Secs. 3.1, 3.1.1, 3.1.4, 3.1.5, 3.1.10, 3.1.11, 3.1.12, 3.3, 3.3.1, 3.3.2, 3.3.3, 3.4, 3.4.1, 3.5, 3.5.2, 6.3.1.6, 6.3.2.3, Figs. 1, 2, Annexes A.1, A.2, A.2.1, A.2.2, A.2.3, A.2.4, A.3, Figs. A.1, A.2, A.3, A.4, Tables A.2, A.3, A.6, A.7 IEC 62196-1:2014 Secs. 3.9, 3.10, 3.11
CN	119705179	1	CCS v. 1.2.9-2019: Secs. 2, 2.1, 2.2, 2.4, 3, 3.1, 3.2; Fig. 5; Tables 1, 2

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Ctry.	Patent	CI	Standards / Sections
CY	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
CZ	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
CZ	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
DE	11 2014 001 783	1	ISO 15118-1:2013, Secs. 3.25, 6; Fig. 1 ISO 15118-2:2014, Secs. 3.23, 8.4.3.8.1, 8.4.3.8.3, 8.4.3.9.1, 8.4.3.9.2, 8.4.3.9.3, 8.4.4.2.2, 8.5.2.10, 8.5.2.11, 8.5.2.12, 8.5.2.13; Figs. 37, I.1, I. 2; Annexes 1 (Figs. I.1, I.2), C. 6
DE	50 2010 008 152.6	1	IEC 61851-1:2017, Secs. 1, 3, 3.1.1, 3.1.4, 3.1.5, 3.1.10, 3.1.11, 3.1.12, 3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.5.2, 6.3.2.3, A.1, A.2.1, A.2.4, A.3, Fig. A.3, Table A.6
DE	50 2010 012 131.5	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
DE	50 2012 001 693.2	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
DE	60 2009 055 930.3	1	IEC 61851-1:2017, Secs. 3.1.1, 3.1.12 IEC 61851-23:2014, Secs. 2, 6.4.3.104, Table CC.3 ISO 15118-1:2013, Secs. 3.11, 3.20, 3.21, 5.3, Fig. 3, Tables 8, 13, 14, 18 ISO 15118-2:2014, Secs. 7.7.3.3, 7.9.2.4
DE	60 2009 063 932.2	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
DE	60 2011 064 410.6	3	IEC 61851-1:2017, Sec. 3.1.12, Fig. 3 ISO 15118-1:2019, Secs. 3.3, 3.7, 3.14, 3.21, 3.25, 3.26, 3.29, 3.36, 3.48, 3.52, 6, 7.1, 7.5, 7.5.1, Figs. 1-3, Table B.4, Annex B.1.3
DK	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
EE	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
ES	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
ES	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4

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Ctry.	Patent	CI	Standards / Sections
ES	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
FI	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
FR	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
FR	2,379,363	1	IEC 61851-1:2017, Secs. 3.1.1, 3.1.12 IEC 61851-23:2014, Secs. 2, 6.4.3.104, Table CC.3 ISO 15118-1:2013, Secs. 3.11, 3.20, 3.21, 5.3, Fig. 3, Tables 8, 13, 14, 18 ISO 15118-2:2014, Secs. 7.7.3.3, 7.9.2.4
FR	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
FR	2,454,117	1	IEC 61851-1:2017, Secs. 1, 3, 3.1.1, 3.1.4, 3.1.5, 3.1.10, 3.1.11, 3.1.12, 3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.5.2, 6.3.2.3, A.1, A.2.1, A.2.4, A.3, Fig. A.3, Table A.6 IEC 62196-1:2014, Secs. 3.9, 3.10, 3.11
FR	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
FR	2,685,586	3	IEC 61851-1:2017, Sec. 3.1.12, Fig. 3 ISO 15118-1:2019, Secs. 3.3, 3.7, 3.14, 3.21, 3.25, 3.26, 3.29, 3.36, 3.48, 3.52, 6, 7.1, 7.5, 7.5.1, Figs. 1-3, Table B.4, Annex B.1.3
GB	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
GB	2,379,363	1	IEC 61851-1:2017, Secs. 3.1.1, 3.1.12 IEC 61851-23:2014, Secs. 2, 6.4.3.104, Table CC.3 ISO 15118-1:2013, Secs. 3.11, 3.20, 3.21, 5.3, Fig. 3, Tables 8, 13, 14, 18 ISO 15118-2:2014, Secs. 7.7.3.3, 7.9.2.4
GB	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
GB	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
GB	2,685,586	3	IEC 61851-1:2017, Sec. 3.1.12, Fig. 3 ISO 15118-1:2019, Secs. 3.3, 3.7, 3.14, 3.21, 3.25, 3.26, 3.29, 3.36, 3.48, 3.52, 6, 7.1, 7.5, 7.5.1, Figs. 1-3, Table B.4, Annex B.1.3

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Ctry.	Patent	CI	Standards / Sections
GR	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
HR	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
HU	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
IE	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
IE	2,685,586	3	IEC 61851-1:2017, Sec. 3.1.12, Fig. 3 ISO 15118-1:2019, Secs. 3.3, 3.7, 3.14, 3.21, 3.25, 3.26, 3.29, 3.36, 3.48, 3.52, 6, 7.1, 7.5, 7.5.1, Figs. 1-3, Table B.4, Annex B.1.3
IS	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
IT	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
IT	2,454,117	1	IEC 61851-1:2017, Secs. 1, 3, 3.1.1, 3.1.4, 3.1.5, 3.1.10, 3.1.11, 3.1.12, 3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.5.2, 6.3.2.3, A.1, A.2.1, A.2.4, A.3, Fig. A.3, Table A.6 IEC 62196-1:2014, Secs. 3.9, 3.10, 3.11
IT	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
IT	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
JP	5,502,067	1	IEC 61851-1:2017, Fig. 3 IEC 61851-23: 2014, Annex CC, Figs. CC.1, CC.6, Tables CC.3, CC.5, D.1 ISO 15118-1:2013, Sec. 3.26, Fig. A.4
JP	5,624,556	1	IEC 61851-1:2017, Sec. 3.1.1 IEC 61851-23:2014, Secs. 2, 6.4.3.104, Table CC.3 ISO 15118-1:2013, Secs. 3.11, 3.21, 5.3, Fig. 3, Tables 8, 13, 14, 18 ISO 15118-2:2014, Secs. 3.20, 7.7.3.3, 8.6.3.2
JP	5,851,730	1	ISO 15118-1:2013, Secs. 3.16, 3.19, 3.26, 3.47, 6.1, 7.1, Fig. 2, 7.6.3, Table 14, Fig. A5
JP	5,899,466	1	ISO 15118-1:2013, Secs. 3.26, 3.29, 3.52, Fig. A.4, Table 8 ISO 15118-3:2015, Table A.7
JP	5,901,906	1	ISO 15118-1:2013, Sec. 7.5.1, Fig. 1, Annex C

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Ctry.	Patent	CI	Standards / Sections
JP	6,038,290	1, 2, 3, 8	ISO 15118-1, Secs. 3, 3.24-3.26, 3.35, 3.52, 3.58, 6, 6.1 ISO 15118-2, Secs. 3, 3.23, 8, 8.4, 8.4.3.8.3, 8.4.3.9.3, 8.8.4.1, 8.7.4, 8.7.4.1, 8.8, 8.8.4.1, 8.8.4.2.3; Annex I, I.1, I.2, and Figs. I.1 and I.2
JP	6,047,284	1,7,8	ISO 15118-1:2013, Secs. 3.2, 3.17, 6.1, 7.1, 7.6.2; Figs. 1, 2; Tables 1, 13
JP	6,140,430	1,7,8	ISO 15118-1:2013, Secs. 3.2, 3.17, 3.21, 3.35, 3.36, 3.53, 6.1, 7.1; Figs. 1, 2
JP	6,464,531	1	ISO 15118-1:2013, Secs. 3.25, 3.26, 3.57, 7.1, Fig. 2, Tables 3, 5, 18, 24, 25, Annex C IEC 61851-1:2017, Sec. 3.1.4, Fig. 3
JP	6,539,903	1,4,9,10	ISO 15118-1:2013, Secs. 3.11, 3.17, 3.21, 3.33, 6.1, 7.1, 7.5.3, 7.5.5, 7.6.2; Figs. 1, 2; Tables 9, 11, 13 IEC 61851-23:2014, Annex DD, Fig. D.1
JP	6,738,380	1,2,3	ISO 15118-1:2013, Secs. 3.47, 3.52, 6.1, 7.1, 7.6.2; Figs. 1, 2, A.6; Tables 1, 13; Annex A.3
KR	2,253,188	1	SAE J1772:2017, Secs. 1, 3.3, 3.10, 3.21, 4, 4.2.2.1, 4.2.2.2, 5.1, 6.1, Figs. 4, 12, 13, Tables 6, 7, 9, 12, Appendices F.1.1, F.1.8, F.1.9 SAE J2847-2:2015, Secs. 1, 3.17, 3.27, 4.2.2, 4.2.3, 4.2.5, 4.2.34, 4.2.35, 4.2.51, 4.2.54
KR	2,320,884	1	SAE J1772:2017, Secs. 1, 3.3, 3.6, 3.21, 4.2.1, 4.2.1.1, 4.2.1.2, Figs. 1, 8, Tables 1, 14, Appendices E, E.2, F, F.1.2
KR	2,504,303	1	SAE J1772: 2017; pp. 1, 17, 30, 35, 73; Figs. 8, 12; Foreword, Sec. F. 1.8; Table 5. IEC 61851-1: 2017 annex A at p. 51 J2847-2: Sec. 1, p.3.
KR	2,866,140	1	CCS v 1.2.9-2019: Secs. 2, 2.1, 2.2, 2.4, 3, 3.1, 3.2; Figs. 1, 3a, 3b, 3c, 3d, 4, 5; Tables 1, 2 SAE J1772: Secs. FOREWORD, 5, 5.1, 5.3, 6, 6.1, 6.2.2.6; Apps. E, E.2, F, F.1.7, F.1.8; Figs. 10,12; Tables 9, 11, 12, 14 SAE J2847/2: Sec. 1 SAE J3400: Secs. 1, 3.8, 3.16, 3.26, 5, 7.4, 7.4.2, 7.4.2.2, 8.1.1.2, 8.2, 8.2.3, 8.2.3.5 ISO 15118-2: Secs. 8.4.3.3.3, 8.5.2.3, 8.5.2.4; Fig. 26; Tables 29, 62, 63
KR	2,866,141	1	CCS v 1.2.9-2019; Secs. 2, 2.1, 2.2, 2.4, 3, 3.1, 3.2; Figs. 1, 3a, 3b, 3c, 3d, 4, 5; Tables 1, 2
LI	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
LI	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
LT	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
LU	2,199,143	1	IEC 61851-1:2017, Sec. ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2

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Ctry.	Patent	CI	Standards / Sections
LV	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
MC	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
MK	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
MT	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
NL	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
NL	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
NL	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
NO	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
PL	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
PL	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
PL	2,685,586	3	IEC 61851-1:2017, Sec. 3.1.12, Fig. 3 ISO 15118-1:2019, Secs. 3.3, 3.7, 3.14, 3.21, 3.25, 3.26, 3.29, 3.36, 3.48, 3.52, 6, 7.1, 7.5, 7.5.1, Figs. 1-3, Table B.4, Annex B.1.3
PT	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
PT	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
RO	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2

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Ctry.	Patent	CI	Standards / Sections
SE	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
SE	2,454,117	1	IEC 61851-1:2017, Secs. 1, 3, 3.1.1, 3.1.4, 3.1.5, 3.1.10, 3.1.11, 3.1.12, 3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.5.2, 6.3.2.3, A.1, A.2.1, A.2.4, A.3, Fig. A.3, Table A.6 IEC 62196-1:2014, Secs. 3.9, 3.10, 3.11
SE	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
SI	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
SK	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
SM	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
TR	2,199,143	1	IEC 61851-1:2017, Sec. 1 ISO 15118-1:2013, Secs. 1, 3.1.27, 3.1.30, 3.1.31, 3.1.33, 3.1.34, 3.1.58, 3.1.68, 5.5.4, 5.6.2, 6, 7.6.1, 7.6.2, 7.9.2, 7.11.2, B.1.2.1, B.1.2.2; Figs. 1, 2, 3; Tables 12, 31, 39, B.2
TR	2,514,056	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4
TR	2,678,185	1	ISO 15118-1:2019, Secs. 1, 3.1.12, 3.1.30, 3.1.31, 3.1.33, 3.1.57, 3.1.68, 7.2.1, 7.4.1, Tables 3 and 8 ISO 15118-2:2014, Secs. 1, 3.1, 3.2, 3.11, 7.4, 7.6, 7.6.3.3, 7.7.1.1, 7.8.2, 7.10.1.1, 7.10.1.4, 7.10.1.5, 7.10.1.7, Figs. 1 and 16, Table 8
US	6,650,120	1	IEC 61851-1:2017, Sec. 6.3.1.4, Annex A (59), Annex D (93-97), Tables D.11, D.22 IEC 61851-23:2014, CC.7 IEC 61851-24:2014, Table A.2 IEEE 2030.1.1-2015, Sec A.7.7.1 SAE J1772, Appendix E (60)
US	8,232,763	1	IEC 61851-1:2017, Sec. 3.1.1 ISO 15118-1:2013, Secs. 3.17, 3.48, 5.4, 6.1, 7.5.2, 7.6.2, Tables 8, 13 NACS compatible
US	8,315,930	1	IEC 61851-1:2017, Sec. 3.1.1 IEC 61851-23:2014, Secs. 2, 6.4.3.104, Table CC.3 ISO 15118-1:2013, Secs. 3.2.1, 3.11, 5.3, Fig. 3, Tables 8, 13, 14, 18 ISO 15118-2:2014, Secs. 3.20, 7.7.3.3, 7.9.2.4 NACS compatible

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Ctry.	Patent	CI	Standards / Sections
US	8,384,347	1	IEC 61851-1:2017, Secs. 3.1.1, 5.5.2, Fig. 3 IEC 61851-23:2014, Secs. 6.4.1, 6.4.3.102, 6.4.3.114, Fig. CC.6, Table CC.5 ISO 15118-1:2013, Sec. 5.5.2 NACS compatible
US	8,390,252	1	IEC 61851-1:2017, Secs. 1, 3.3, 3.4, Tables A.5, A.6 ISO 15118-1:2013, Secs. 1, 3, 3.25, 3.9, 3.11, 5.4, 7.6.2 ISO 15118-2:2014, Sec. 8.4.3.8.1 NACS compatible
US	8,466,656	1	IEC 61851-1:2017, Secs. 3.1.1, 3.3.2, 3.3.4, 3.1.12, A.2.1, A.2.2, A.2.3, Figs. A.1, A.2, Table A.2, A.4 IEC 61851-23:2014, Secs. 3, 6.4.1, 102.2, 102.3.2, Table 102, CC.3.3, Table CC.4 NACS compatible
US	8,500,013	1	IEC 61851-1:2017, IEC 61851-23:2014, ISO 15118-2:2014, Sec. 2 of each ISO 15118-1:2019, Secs. 3.1.1, 3.1.27, 5.5.4, 6, 7.1, 7.6.2, 7.6.4, B.1.2.2, C.6.5.3, Fig. 2, Tables 12 and C.3
US	8,624,719	1	IEC 61851-23:2014, Table D.1, Fig. AA.1 SAE J1772:2017, p.29-30, Figs. 7-8:Control Electronics, p. 63/116 "PEV Scheduled Charge", "phone app" Alternate mapping: IEC 61851-1: 2019, Secs. 6.2.1, 6.2.2 IEC 61851-23:2014, Secs. 102.2, AA.4.1, Tables AA.1, D.1, Fig. AA.1 ISO 15118-1:2019, Secs. 3.1.48, 3.1.75, 5.7.2, 6, 7.3.3, 7.3.5, 7.6.2, 7.6.3 NACS compatible
US	8,706,312	1	IEC 61851-1:2017, Sec. 3.1.1, Table A.5 IEC 61851-23:2014, Sec. 2 ISO 15118-1:2013, Secs. 3.11, 3.17, 3.19, 3.48, 5.3, 5.5.1, 5.5.3, Table 13 NACS compatible
US	8,710,796	1	IEC 61851-1:2017, Figures on pp. 86-91, Secs. 3.3.4, 8.3, 8.5, 13, 14, A.2.2
US	8,823,330	1	IEC 61851-1:2017, Secs. 3.1.1, 5.5.2, Fig. 3 IEC 61851-23:2014, Secs. 6.4.1, 6.4.3.102, 6.4.3.114, Fig. CC.6, Table CC.5 ISO 15118-1:2013, Sec. 5.5.2 NACS compatible
US	8,850,226	1	ISO 15118-2:2014, Secs. 1, 3.21, 7.3.1, 7.3.4, 7.5, 7.7.3.1, 7.7.3.2, 7.7.3.3, 7.7.3.4 NACS compatible
US	8,860,366	1	SAE J1772:2017, pp. 29, 30, 68, Figs. 7, 8, Table 9
US	8,860,559	1	IEC 61851-1:2017, Secs. 3.1.12, 3.5.2, Fig. 3 IEC 61851-23:2014, Sec. 3.101, Figs. CC.1, CC.6, CC.7, Tables CC.3, CC.5, Annex CC.1, CC.3.1 ISO 15118-1:2013, Secs. 1, 3.14, 7.1, 7.5.2, Table 8 ISO 15118-3:2015, Sec. 6.3 NACS compatible

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Ctry.	Patent	CI	Standards / Sections
US	8,886,391	1	ISO 15118-2:2014, Sec. 7.6.2.2, Sec. E.1.2 (R3) IEC 61851-24:2014, Fig. 1, Table B.3 IEEE 2030.1.1-2015, Sec. A.7.2.7.2
US	8,890,473	1	IEC 61851-1:2017, pp. 47, 51, 59, 86, 88-91, 122, Secs. 12.2.5, 13.1, 14, A 2.2 SAE J1772:2017, pp. 29, 30, 68 Alternate mapping: IEC 61851-1:2017, pp. 47, 51, 59, 86, 88-91, 122, Secs. 6.2.1, 6.2.2, 12.2.5, 13.1, 14, A 2.2, Tables A.5, A.6, D.12, Fig. D.6 ISO 15118-1:2019, Secs. 3.1.33, 3.1.48 NACS compatible
US	9,024,744	1	IEC 61851-23:2014, Fig. AA.1, Table D.1 SAE J1772:2017, p. 63, "phone app" Alternate mapping: IEC 61851-23:2014, Fig. AA.1, Table D.1 ISO 15118-1:2019, Secs. 3.1.48, 3.1.75, 5.7.2, 6, 7.3.3, 7.3.5, 7.6.2, 7.6.3 NACS compatible
US	9,030,153	1	IEC 61851-1:2017, Secs. 1, 3.1.1 IEC 61851-23:2014, Sec. 2 ISO 15118-1:2013, Secs. 5.2, 7.7.2, Tables 18, 19 ISO 15118-2:2014, Sec. 8.6.3.2 NACS compatible
US	9,035,607	1	IEC 61851-1:2017, Secs. 3.1.1, Figs. 3, C.1 ISO 15118-1:2019, Sec. 5.3.1, Fig. A.4, Tables 34, A.2, C.3, E.1, Annex C.6.5.3 ISO 15118-2:2014, (Error Reporting, e.g., V2G1-ED2-8, -10, -11) NACS compatible
US	9,054,535	1	CCS 1.0-2015, Secs. 2.1, 2.4, 3.1, p. 11 IEC 61851-1:2017, Secs. 1.0, 3.1, 3.1.1, 3.3, 3.3.2, 3.3.4, 7.2, Table D.10 IEC 61851-23:2014, Table 102, pg. 30, BB.1, CC.3, CC.4, Figs. CC.1-CC.3 ISO 15118-1:2013, Sec. 7.2, Table 2 Alternate mapping: IEC 61851-1:2017, Secs. 1.0, 3.1, 3.1.1, 3.3, 3.3.2, 3.3.4, 6.2, 7.2, Tables A.5, A.6, D.10 IEC 61851-23:2014, Table 102, Annexes AA, BB, CC (see, e.g., state transition and sequence diagrams) NACS compatible
US	9,090,174	10	ISO 15118-1:2013, Secs. 3.26, 3.29, 3.44, 7.5.2, Fig. A.4, Tables 8, A.1, Annex A.2 ISO 15118-3:2015, Secs. 3.20, 6.4.2.2, Table A.7, Annex A.9.4.1 NACS compatible

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Ctry.	Patent	CI	Standards / Sections
US	9,121,073	1	IEC 61851-1:2017, Pages 88, 92, Table C.1, Figs. C.3, C.6 IEC 61851-23:2014, Figs. AA.1, BB.4, Table 101 NACS compatible
US	9,124,104	1	IEC 61851-1:2017, <i>passim</i> . Secs. 3.1.11, 7.1 IEC 61851-23:2014, Secs. 102.3.2, 102.5, BB 3.6, CC.3.1, Tables 102, 103, Fig. AA.1 ISO 15118-1:2013, Sec. 3.19 Alternate mapping: IEC 61851-1:2017, Secs. 3.1.11, 3.6.7, 3.7.1, 6.2.1, 6.2.2, 7.1, 8.2.1 IEC 61851-23:2014, Secs. 102.3.2, 102.5, BB 3.6, CC.3.1, Tables 102, 103, Fig. AA.1 NACS compatible
US	9,184,792	5, 7	IEC 61851-1:2017, Secs. 3.1.1-3.1.10, 3.3.1-3.3.4, 3.5.2, Annex A, Table A.4, Annex D, Secs. D.8.2.2, D.9.1-D.9.5, Figs. D.1, D.2, D.9, Clause D.9, Tables D.1, D.6
US	9,203,241	1	ISO 15118-1:2019, Secs. Intro, 3.2, 3.26, 5.5.1, 7.6.3, Fig. A.4, Tables 14, C.3 ISO 15118-2:2014, Secs. 8.4.3.8.1, 8.4.3.8.2, 8.4.3.8.3 NACS compatible
US	9,227,519	1, 12, 14, 17	IEC 61851-1:2017, Secs. 1, 3, 3.1.1, 3.1.4, 3.1.5, 3.1.10, 3.1.11, 3.1.12, 3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.5.2, 6.3.2.3, A.1, A.2.1, A.2.4, A.3, Fig. A.3, Table A.6 IEC 62196-1:2014 Secs. 3.9, 3.10, 3.11 NACS compatible
US	9,278,620	1, 3	IEC 61851-1:2017, Figs. 1, 2, 3 IEC 61851-24:2014, Tables A.1, A.7
US	9,283,863	1,16	ISO 15118-1:2013, Secs. 5.4, 7.1, 7.6.1, 7.6.2 IEC 61851-1:2017, <i>passim</i> NACS compatible
US	9,475,393	1	IEC 61851-1: 2017, Secs. 3.1.1, 3.1.12, 6.3.1.3, Fig. 3, 3.3.2, 3.3.4, Annex A (Secs. A.2.1, A.2.2, A.2.3, Figs. A1, A2, Tables A.2, A.4) IEC 61851-23:2014, Secs. 3, 6.4.1, 102.2, 102.3.2, Table 102, Sec. CC.3.3, Table CC.4 NACS compatible
US	9,475,399	1	IEC 61851-1:2017, Secs. 3.3.4, 3.5.2, Fig. C.6, Table A.6 IEC 61851-23:2014. Sec. 6.4.3.104 ISO 15118-1:2013, Secs. 3.1.4, 7.9 ISO 15118-2:2014, pp. 28 and 323 NACS compatible
US	9,475,400	1	IEC 61851-1:2017, Secs. 3.1.12, 3.5.2, 8.5, 13.1-13.3 IEC 61851-23:2014, Secs. 3.107, 3.109, 6.2, 6.3.1, 6.4, 6.4.3.4, 6.4.3.114, 6.4.5, 102.1, 102.5.4, Annex CC Secs. 3.4, 4.2, 7, Table CC.5, Figs. CC.1, CC.3 NACS compatible

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Ctry.	Patent	CI	Standards / Sections
US	9,487,099	1	SAE J1772:2017, pp. 29/116, Figs. 7, 8, p. 104 Fig. 27 Alternate mapping: IEC 61851-1:2017, pp. 59, 87-91, Secs. 6.2.1, 6.2.2, Figs. 1-3 IEC 61851-23:2014, Table D.1, Figs. AA.1, AA.4.1 ISO 15118-1:2019, Secs. 3.1.33, 3.1.48, 3.1.75, 5.7.2, 6, 7.3.3, 7.3.5, 7.6.2, 7.6.3 NACS compatible
US	9,590,416	1, 11	IEC 61851-1:2017, Secs. 3.3.5, 3.5.16, 3.7.6, 8.1, 8.2, A.4.7.1, C.2, Tables A.6, C.1, D.22 IEC 61851-23:2014, Annex CC, Table CC.4 NACS compatible
US	9,963,042	11, 12, 13	ISO 15118-2:2014, Secs. 3.23, 8.8.4.1, Annex I, Fig. I.2
US	9,783,068	4	ISO 15118-1:2013, Secs. 1, 3, 3.11, 3.12, 3.24-26, 3.52, 7.6.3, 7.7.3, 7.7.4 ISO 15118-2:2014, Secs. 3, 3.2, 4, 8.4.3.8.1-3, 8.4.3.9.1-3, 8.5.2.13-15 NACS compatible
US	10,189,367	1	SAE J1772:2017, Appendix F.1.9 SAE J2847-2:2015, Secs. 1, 3.27, 4.2.2, 4.2.3, 4.2.5, 4.2.34, 4.2.35, 4.2.51, 4.2.54
US	10,263,413	10	IEC 61851-1:2017, Secs. 3.1.1, 3.1.5, 3.5.2, 3.7.8, 6.3.1.6, 11.1, 11.2, 13.2, A.2.1, B.2, Tables A.8, B.2
US	10,611,255	1	SAE J1772:2017; pp. 33, 35, 60, 80; Figs. 10, 12; Secs. 5, 5.1, 5.3, 6, 6.1 and 6.2.2.6; Appendices E, F; Tables 9 and 12. J2847-2; Sec. 1, p. 3.
US	10,850,630	1, 5, 13, 14	ISO 15118-1:2013, Secs. 3.11, 3.14, 3.17, 3.19, 3.20, 3.22, 3.38, 5.3.1, 5.4, 6.1, 7.1, 7.2.1, 7.2.2, 7.5.3, 7.5.5, 7.6.2; Figs. 1, 2, 3; A.5; Tables 1, 3, 4, 9, 11, 13; Annex A.3 IEC 61851-23:2014, Annex DD, Fig. D.1 NACS compatible
US	11,198,374	1	SAE J1772: 2017; pp. 1, 17, 30, 35, 73; Figs. 8, 12; Foreword, Sec. F. 1.8; Table 5. IEC 61851-1: 2017; Annex A at p. 51. J2847-2; Sec. 1, p.3.
US	11,667,207	1	CCS v. 1.2.9:2019; pp. 6, 7, 12, 19; Secs. 2.1, 2.2, 2.4, 3, 3.1, 3.2; Figs. 3a-3c, 5; Tables 1, 2.
US	Re. 48,406	8, 16-18, 20	ISO 15118-1:2013, Secs. 3.6, 3.17, 3.20, 3.27, 3.35, 3.36, 3.53, 6.1, 7.1, 7.5.3, 7.5.5, 7.6.2; Figs. 1, 2, 3; Tables 9, 13 ISO 15118-2:2014, Fig. 5 NACS compatible

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