



Disclosure Statement and Licensing Declaration
This declaration does not represent an implied license grant

Please return to:

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1750 K Street NW
Suite 1200
Washington, DC 20006
202-872-9160 – Office
202-872-9161 – Fax

Discloser:	
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E-mail	choims@etri.re.kr
URL (optional)	
Identification of ATSC Specification Document relevant to the Disclosure Statement:	
Number	ATSC A/331
Title	ATSC 3.0 Signaling, Delivery, Synchronization and Error Protection

Licensing Declaration

If the Discloser is the holder of a patent and/or pending patent application that is the subject of an Essential Claim, *i.e.*, the use of which it believes would be required to implement the identified ATSC Specification Document, the Discloser hereby declares, in accordance with the Statement on ATSC Patent Policy (see ATSC website), that (check one box only).

a. The Discloser agrees to make a license to the Essential Claim available without compensation upon request to all applicants for the purpose of implementing the Specification Document, which license may be conditioned upon license reciprocity with respect to the same Specification Document. Negotiations are left to the parties concerned and are performed outside of ATSC.

Mark here ___ if the Discloser's willingness to license is conditioned on reciprocity for the above ATSC Standard.

✓ b. The Discloser agrees to make a license to the Essential Claim available upon request under reasonable and nondiscriminatory terms and conditions to all applicants for the purpose of implementing the Specification Document, which conditions may include license reciprocity with respect to the same Specification Document. Negotiations are left to the parties concerned and are performed outside of ATSC.

Mark here if the Discloser's willingness to license is conditioned on reciprocity for the above ATSC Standard.

c. The Discloser will not make a license to the Essential Claim under reasonable and nondiscriminatory terms and conditions to applicants for the purpose of implementing the Specification Document.

Without Compensation: The phrase "without compensation" does not mean that the Discloser is waiving all of its rights with respect to each patent or patent application that is the subject matter of the Essential Claim. Rather, "without compensation" refers to the issue of monetary compensation; *i.e.*, that the Discloser will not seek any monetary compensation as part of the licensing arrangement (whether such compensation is called a royalty, a one-time licensing fee, etc.). However, while the Discloser in this situation is committing to not charging any monetary amount, the Discloser is still entitled to require that the implementer of the ATSC Specification Document sign a license agreement that contains other reasonable terms and conditions such as those relating to governing law, field of use, reciprocity, warranties, etc.

Reciprocity: As used herein, the word "reciprocity" means that the Discloser shall only be required to license any prospective licensee under the stated terms (without compensation or under reasonable and nondiscriminatory terms and conditions) if such prospective licensee will commit to license its patent(s) or patent application(s) forming the subject matter of an Essential Claim under similar (without compensation or under reasonable and nondiscriminatory) terms and conditions.

Disclosure of Patents

In accordance with Sections 3 and 4 of the ATSC Patent Policy, please identify each patent or patent application forming the subject matter of any Potential Claim of which any Representative of the Discloser who is active in an ATSC technology group or specialist group has actual personal knowledge. The Discloser, in good faith, believes that the Potential Claim may be relevant to the implementation of the Specification Document identified by this Disclosure Statement.

N o.	Patent / Application No. and Country	Patent / Application Holder	Status [granted/ pending]
1	2613543 EP	ETRI	granted
2	14184311.0 EP	ETRI	pending
3	16183714.1 EP	ETRI	pending
4	16183859.4 EP	ETRI	pending
5	ZL201180042362.1 CN	ETRI	granted
6	201610707820.3 CN	ETRI	pending
7	201610708991.8 CN	ETRI	pending
8	201610710866.0 CN	ETRI	pending
9	9794312 US	ETRI	granted
10	15/785275	ETRI	pending
11	1366437 KR	ETRI	granted
12	1433439 KR	ETRI	granted
13	1756426 KR	ETRI	granted
14	2017-0084968 KR	ETRI	pending
15	12756927.5 EP	ETRI	pending
16	15163844.2 EP	ETRI	pending
17	15163845.9 EP	ETRI	pending
18	201280013527.7 CN	ETRI	pending
19	201710060188.2 CN	ETRI	pending
20	14/004644 US	ETRI	pending
21	2012-0026862 KR	ETRI	pending

22	9628528 US	ETRI	granted
23	15/488224 US	ETRI	pending
24	2014-0079015 KR	ETRI	pending
25	14828891.3 EP	ETRI	pending
26	14/906994 US	ETRI	pending
27	2014-0092615 KR	ETRI	pending
28	15735102.4 EP	ETRI	pending
29	201580004175.2 CN	ETRI	pending
30	15/110500 US	ETRI	pending
31	2015-0000758 KR	ETRI	pending
32	11809870.6 EP	ETRI and Industry-University Cooperation Foundation Kore	pending
33	11823752.8 EP	ETRI and Industry-University Cooperation Foundation Kore	pending
34	11830913.7 EP	ETRI and Industry-University Cooperation Foundation Kore	pending
35	17162129.5 EP	ETRI and Industry-University Cooperation Foundation Kore	pending
36	17184168.7 EP	ETRI and Industry-University Cooperation Foundation Kore	pending
37	ZL201180042908.3 CN	ETRI and Industry-University Cooperation Foundation Kore	granted
38	ZL201180048729.0 CN	ETRI and Industry-University Cooperation Foundation Kore	granted
39	201180045280.2 CN	ETRI and Industry-University Cooperation Foundation Kore	pending
40	201610221910.1 CN	ETRI and Industry-University Cooperation Foundation Kore	pending
41	201710014153.5 CN	ETRI and Industry-University Cooperation Foundation Kore	pending
42	9325558 US	ETRI and Industry-University Cooperation Foundation Kore	granted
43	8645562 US	ETRI and Industry-University Cooperation Foundation Kore	granted
44	8909805 US	ETRI and Industry-University Cooperation Foundation Kore	granted
45	9338211 US	ETRI and Industry-University Cooperation Foundation Kore	granted
46	9467493 US	ETRI and Industry-University Cooperation Foundation Kore	granted
47	9369512 US	ETRI and Industry-University Cooperation Foundation Kore	granted
48	14/247488 US	ETRI and Industry-University Cooperation Foundation Kore	pending
49	15/287260 US	ETRI and Industry-University Cooperation Foundation Kore	pending

50	1206111 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
51	1206698 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
52	1754414 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
53	1371965 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
54	1372161 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
55	1285058 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
56	1291992 KR	ETRI and Industry-University Cooperation Foundation Kore	granted
57	2011-0071671 KR	ETRI and Industry-University Cooperation Foundation Kore	pending
58	2012-0029956 KR	ETRI and Industry-University Cooperation Foundation Kore	pending
59	2014-0002413 KR	ETRI and Industry-University Cooperation Foundation Kore	pending
60	2014-0125870 KR	ETRI and Industry-University Cooperation Foundation Kore	pending
61	2017-0082921 KR	ETRI and Industry-University Cooperation Foundation Kore	pending
62	8774219 US	ETRI	granted
63	8923342 US	ETRI	granted
64	9300557 US	ETRI	granted
65	9319721 US	ETRI	granted
66	9386125 US	ETRI	granted
67	9473378 US	ETRI	granted
68	9553912 US	ETRI	granted
69	9614936 US	ETRI	granted
70	9635394 US	ETRI	granted
71	9641831 US	ETRI	granted
72	9654533 US	ETRI	granted
73	1458391 KR	ETRI	granted
74	2012-0105347 KR	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACA	pending
75	2013-0009251 KR	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACA	pending
76	2014-0134583 KR	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACA	pending
77	2014-0087804 KR	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACA	pending

78	15/031540 US	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACADEMIC COOPERATION FOUNDATION	pending
79	15/031581 US	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACADEMIC COOPERATION FOUNDATION	pending
80	15/110854 US	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACADEMIC COOPERATION FOUNDATION	pending
81	2015-0000447 KR	ETRI and YONSEI UNIVERSITY WONJU INDUSTRY-ACADEMIC COOPERATION FOUNDATION	pending
82	2012-0133477 KR	ETRI and Industry-University Cooperation Foundation Korea Aerospace University	pending
83	201280057672.5 CN	ETRI	pending
84	2017-557980 JP	ETRI	pending
85	2012-0006374 KR	ETRI	pending
86	2011-0117177 KR	ETRI	pending
87	2012-0063213 KR	ETRI	pending
88	2012-0113531 KR	ETRI	pending
89	2012-0113533 KR	ETRI	pending
90	2013-0085042 KR	ETRI	pending
91	2014-0002639 KR	ETRI	pending
92	2014-0008880 KR	ETRI	pending
93	2014-0040189 KR	ETRI	pending
94	2014-0002916 KR	ETRI	pending
95	2014-0128463 KR	ETRI	pending
96	2015-0080325 KR	ETRI	pending
97	2016-0072720 KR	ETRI	pending
98	PCT/KR2016/006333 WO	ETRI	pending
99	15/069549 US	ETRI	pending
100	14/414351 US	ETRI	pending
101	14/414394 US	ETRI	pending
102	15/574026 US	ETRI	pending

Disclosure of Information

In accordance with Sections 3 and 4 of the ATSC Patent Policy, if the Discloser has made a licensing declaration under paragraph (c) above, please provide the following information;

- an identification of each patent or patent application that is the subject matter of the Essential Claim;
- an identification of specific section(s) or text of the Specification Document that are relevant to the Essential Claim; and
- an identification of each patent or patent application claim covering the Specification Document.

This information is informal in nature and does not constitute a legal opinion, but should be based on "good faith and belief" of the Discloser. Information provided in this section does not represent a formal "notice" that implementation of any resulting ATSC Standard or Recommended Practice would infringe any patent or patent application for the Essential Claim.

Completed By:

Name of Participant

Electronics and Telecommunications Research Institute

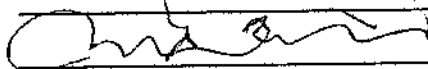
Name of Representative

Min-Sheo Choi

Title of Representative

Director of Intellectual Property Business Section

Signature



Place, Date

Daejeon, Republic of Korea, November 24, 2017