



REVISED LETTER OF ASSURANCE FOR ESSENTIAL PATENT CLAIMS
FFX Mode of Operation for Format-Preserving Encryption

No License is Granted or Implied by this Revised Letter of Assurance

April 2, 2013

This Letter of Assurance shall serve to amend and restate the letter of assurance issued to the National Institute of Standard and Technology (NIST) on June 1, 2011. Voltage Security, Inc., a US corporation having offices at 20400 Stevens Creek Boulevard, Cupertino, CA 95014 hereby declares that it may own or control Patent Claims that might be or become Essential Patent Claims in respect of the FFX Mode of Operation for Format-Preserving Encryption under consideration by the Security Technology Group (STG) of the Computer Security Division of the NIST for approval as a NIST Recommendation in the 800 series of NIST Special Publications.

If NIST approves as a NIST Recommendation in the 800 series NIST Special Publications any algorithm that is equivalent to the FFX Mode of Operation for Format-Preserving Encryption with any parameter set (including, but not limited to, the use of VAES3 and/or the block cipher component of the BPS algorithms in achieving the proposed recommendation for Format-Preserving Encryption) then, with respect to all such Essential Patent Claims that Voltage may currently or in the future own or control, Voltage agrees that upon request it will make available a non-exclusive license, under reasonable rates with or without compensation, to an unrestricted number of applicants on a worldwide basis with reasonable terms and conditions that are demonstrably free of unfair discrimination for the purpose of implementing the approved standard. The foregoing licensing commitment is subject to applicant reciprocity. Any negotiations and licenses may be subject to confidentiality obligations under reasonable terms.

Voltage identifies the following patent and pending patent application that it believes may include disclosure of subject matter supporting Patent Claims that might be or become Essential Patent Claims:

United States Patent 7864952, Pauker, et al., "Data processing systems with format-preserving encryption and decryption engines," issued 01/04/2011.

United States Patent Application Serial No. 12/967,008, Pauker et al., "Data processing systems with format-preserving encryption and decryption engines."

Voltage represents and warrants to its actual knowledge as of the date of this Letter of Assurance that it is the sole owner by assignment of United States Patent 7864952 and US Patent Application Serial No. 12/967,008. Additional patent applications related to the above

referenced patent application or proposed standard may be filed, including continuations and other related applications.

Nothing in this Letter of Assurance shall be interpreted as giving rise to a duty on the part of Voltage to conduct a patent search. No position is taken or should be inferred with respect to the validity or essentiality of Patent Claims, whether or not identified in this Letter of Assurance.

With respect to any Essential Patent Claims that an Affiliate of Voltage may currently or in the future own or control, Voltage agrees that the terms of this Letter of Assurance are and will be binding on such Affiliate.

The person signing this Letter of Assurance represents that he has the authority to bind Voltage and all Affiliates to the representations and commitments provided in this Letter of Assurance. Voltage and all Affiliates agree not to sell or otherwise transfer ownership or control of any Essential Patent Claims that they own or control with the intent of circumventing or negating any of the representations and commitments made in this Letter of Assurance.

Voltage agrees that it shall make any assignment or transfer of ownership or control of any Essential Patent Claims by Voltage or its Affiliates subject to this Letter of Assurance.

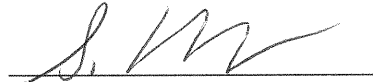
For the purposes of this Letter of Assurance:

“Affiliate” means any entity that directly, or indirectly through one or more intermediaries, is controlled by Voltage. For the purposes of this definition, the term “control” and its derivatives, with respect to for-profit entities, means the beneficial ownership, directly or indirectly, of more than fifty percent (50%) of the capital stock (or other ownership interest, if not a corporation) of an entity having voting rights. “Control” and its derivatives, with respect to nonprofit entities, means the power to elect or appoint more than fifty percent (50%) of the Board of Directors of an entity. An entity shall be considered an Affiliate only so long as such Control exists.

“Essential Patent Claim” means any Patent Claim the use of which was necessary to create a compliant implementation of either mandatory or optional portions of the normative clauses of the FFX Mode of Operation for Format-Preserving Encryption (including BPS, VAES or other similarly structured mode for format-preserving encryption) when, at the time of the approval of the FFX Mode of Operation for Format-Preserving Encryption with any parameter set as a NIST Recommendation in an 800 series NIST Special Publication, there was no commercially and technically feasible non-infringing alternative.

“Patent Claim(s)” means one or more claims in an issued patent(s) or that issue in the future from a pending patent application(s), including any claims that may issue in the future for any subject matter disclosed but not currently claimed in an issued patent(s) or a pending patent application(s).

Voltage or its Affiliate will be considered to “own or control” an Essential Patent Claim if Voltage or its Affiliate is the sole owner of the Essential Patent Claim or otherwise has or obtains the right to grant licenses as set forth in this Letter of Assurance without requiring any payments or other obligations to any third party that is not an Affiliate of Voltage.



Sathvik Krishnamurthy
Chief Executive Officer
Voltage Security, Inc.