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February 1, 2015

BY ECF

The Honorable Katherine B. Forrest
United States District Judge
Southern District of New York
United States Courthouse
500 Pearl Street
New York, New York 10007

Re: *United States v. Ross Ulbricht*,
            14 Cr. 68 (KBF)

Dear Judge Forrest:

        This letter is submitted in response to the government's January 31, 2015, letter seeking preclusion of the expert testimony of proposed defense witness Dr. Steven Bellovin. For the reasons set forth below, the government's application should be denied in its entirety.

**I.   *The Expert Notice Provided to the Government Regarding
        Dr. Bellovin's Testimony Is Sufficient Pursuant to Rule 16
        (b)(1)(C), Fed. R. Crim. P., and His Testimony Should Not Be
        Excluded for Failure to Comply With Rule 16 (b)(1)(C), Fed.R. Crim.P.***

        The government claims in its letter, at 4, that the expert notice provided regarding the testimony of Dr. Bellovin is "plainly insufficient under the Federal Rules of Criminal Procedure, as it merely provides a list of topics the defense seeks for Dr. Bellovin to testify about." While the defense disagrees with the characterization of the expert notice as to Dr. Bellovin's testimony, Dr. Bellovin's testimony should regardless not be precluded without an opportunity for defense counsel to provide further specifics as the opinions Dr. Bellovin plans to offer and the bases for those opinions.

        Indeed, even if a party is found to have made insufficient disclosures regarding the

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proposed testimony of their expert witness pursuant to Rule 16, it is appropriate for that party to be given the opportunity to correct the insufficiency before the extreme remedy of preclusion of the expert testimony is warranted. *See   United States v. Mavashev*, No. 08-CR-902(DLI)(MDG), 2010 WL 234773, at *2 (E.D.N.Y. Jan. 14, 2010) (holding that the "failure to disclose must generally be complete before a court will preclude an expert witness from testifying" and that exclusion of expert was not warranted because "it cannot be asserted that the government has 'made no attempt at all' to comply with Fed.R.Crim.P. 16(a)(1)(G)"). *See also United States v. Healey,* 860 F.Supp.2d 262, 268 (S.D.N.Y. 2012) (citing Court's broad discretion to fashion a remedy, including granting discovery or a continuance).

Nor is the bar for sufficiency particularly high. *See United States v. Lesniewski*, No. 11 CR 1091, 2013 WL 3776235, at *12 (S.D.N.Y. July 12, 2013) (Court found that the "plain language" of the Rule was satisfied when the government disclosed the C.V. of its expert witness, as well as disclosing that its expert witness "was expected to offer opinions based on his training and experience and his review of certain records").

Thus, in an abundance of caution, the defense provides the following additional details regarding Dr. Bellovin's proposed expert testimony, including each subject's relationship to cross-examination that was precluded because it was held to be beyond the scope of direct examination (thereby requiring a defense witness):

1.   *General Principles of Internet Security and Vulnerabilities*

On cross-examination, Special Agent Kiernan was asked about the security implications of open ports on a computer connected to the internet. (*See* Tr. at 1071 – 1074). Defense exhibit C-1 provided to the Government is the "settings" file associated with the Bit torrent client that was known to be running on Mr. Ulbricht's computer at the time of his arrest. The file demonstrates that the Bit torrent client was listening on a range of ports and the defense will elicit testimony from Dr. Bellovin as to the security implications of this practice. This is both material and relevant to the defense theory because it calls to question the source of the information recovered from Mr. Ulbricht's laptop.

2.   *The Operation of Timestamps in UNIX-based Operating Systems*

One issue that has repeatedly arisen is the question of when certain files on Mr. Ulbricht's laptop were created and/or modified. (*See e.g,* Tr. at 923 "And what was the date that this file was last changed, according to the metadata?"). Special Agent Kiernan admitted on cross-examination that this type of metadata can be edited. There is a factual issue with regard to a statement made by Special Agent Kiernan on cross-examination, in which he testified that the Ext4 version of the file system records creation time for files on the Ubuntu Linux operating

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system. The defense seeks to elicit testimony from Dr. Bellovin with respect to this issue, as well as the fact that timestamps can in UNIX-based operating systems can be edited using the program, "Touch."

> ### 3.   *The Import of Certain Lines of PHP Code Produced In Discovery*

The specific lines of code have been provided to the Government as defense exhibits C5 – C8. These lines of PHP code in conjunction with the data provided in defense C9 demonstrate how a user logging into the Silk Road Market server could access the Mastermind page on the server. The defense sought to question Special Agent Kiernan on the PHP code from the server controlling access to the mastermind page but was foreclosed from doing so. (*See* Tr. at 1084). The defense seeks to elicit testimony from Dr. Bellovin on the question of whether an individual logging in on the Dread Pirate Roberts account would automatically be directed to the Mastermind page.

> ### 4.   *Forensic Memory Analysis*

During the testimony of Special Agent Beeson, testimony was elicited on cross-examination that Mr. Ulbricht's laptop crashed before a full capture of the system's memory could be captured. (*See* Tr. at 1246). The defense seeks to elicit testimony from Dr. Bellovin regarding information that is stored in RAM on a live system. Such information includes the processes or computer programs that are running on a given system. Such testimony is relevant because it demonstrates that without a full RAM capture, it cannot be determined with any certainty whether or not Mr. Ulbricht's laptop suffered a security breach or was compromised in any way.

> ### 5.   *General Issues Related to Linux-based Operating Systems,*
> ### *Including Security, Implications of Various Linux Kernel*
> ### *Versions, and Differing Methods of Software Installation*

Special Agent Kiernan testified on direct examination that the Torchat program automatically assigns the name "myself" in the log files it generates to the person using the computer. (*See* Tr. at 890). This testimony was the result of a test that was run by Special Agent Kiernan on a virtual computer that was setup to mimic Mr. Ulbricht's laptop. On cross-examination, Special Agent Kiernan admitted that he did not know whether the version of the Torchat program he used for his experiment was the same version as the Torchat program on Mr. Ulbricht's laptop. This could lead to a markedly different result.

Nor was the defense permitted to question SA Kiernan as to whether he ensured that he was using the same Linux Kernel version for his experiment as that of Mr. Ulbricht's laptop.

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(*See* Tr. at 1091). Varying kernel versions in the linux operating system can alter the way a system's software and hardware function.

The defense seeks to elicit testimony from Dr. Bellovin as to the varying methods of software installation in linux operating systems, which can change the way a computer program operates. This includes varying kernel versions and software versions. This testimony is material and highly relevant because it challenges the results of SA Kiernan's test regarding the torchat program and its logging function.

      6.   *General Principles of Public-key Cryptography*

The defense seeks to elicit testimony from Dr. Bellovin with regard to proper storage methods of private PGP keys on a given system, as well as the ease of transferring private and public keys from one computer user to another. The defense was foreclosed from questioning SA Kiernan about secure storage for private keys on a computer. (*See* Tr. at 1063).

II.   *Expert Notice as To Dr. Bellovin Is Also Timely and Appropriate, and The Government Improperly Seeks to Preclude His Testimony On Those Grounds*

The government, in its letter, at 6, and n.1, contends that the defense "has waited until such a late stage of the proceeding to notice an expert" given that the "defendant has had more than ample time to develop a potential expert" and also goes so far as to criticize defense counsel's in-court "suggest[ion]" that "his need to call expert witnesses has arisen from the fact that he has not been able to elicit evidence required to support the defense theory through the cross-examination of the Government's fact witnesses." The government's assertions are entirely unavailing and do not warrant the preclusion of Dr. Bellovin's testimony.

In fact, the defendant has every right to assess the evidence that has come in through the government's case-in-chief before determining whether to consult and call upon an expert witness, and thus it is entirely proper for Mr. Ulbricht to provide expert notice as to Dr. Bellovin's testimony just prior to the close of the government's case when the necessity of the testimony became apparent. *See United States v. Tin Yat Chin*, 476 F.3d 144, 146 (2d Cir. 2007) (government's rebuttal expert was permitted to testify although the prosecution did not disclose its intent to call the expert or anything about his testimony until the day before the defense rested and court permitted defense to have one day continuance to prepare for the rebuttal expert witness).

Indeed, as detailed **ante**, given the limitations placed on Mr. Ulbricht's ability to cross-examine certain witnesses, namely Special Agent Christopher Beeson and Special Agent Thomas Kiernan, as to particular areas relevant to the defense theory, and the lack of opportunity

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to elicit relevant evidence through subsequent government witnesses, it is neither surprising, nor untimely, nor unreasonable for the defense to consult with and to ultimately decide to call Dr. Bellovin at this stage in the trial. *See, e.g., Gersten v. Senkowski*, 426 F.3d 588, 601 (2d Cir. 2005) (finding in context of ineffective of assistance of counsel claim that "defense counsel didn't need to consult with or call expert witnesses to rebut the People's experts who were neutralized by cross-examination").
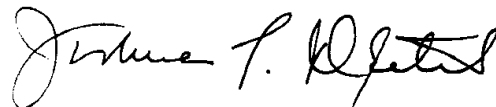
Nor are the subject matters of Dr. Bellovin's testimony a mystery to the government, or outside the scope of the discovery provided by the government – with which by now it should be sufficiently familiar – and even the government's exhibits at trial. In fact, the government's objections are a problem of its own making: despite an Exhibit deadline of December 3, 2014, the government has throughout the trial (and the period just before trial) added dozens of exhibits, modified scores of others, and deleted dozens as well. The government also added three witnesses and removed one (representing, in effect, a 33% change in its witness list). The moving evidentiary target the government has created throughout trial more than amply justifies the defense's inability to assess the contours of the government's case, and, in turn, the need for a defense expert, until the government's actual case was presented.

Thus, Dr. Bellovin's testimony should be permitted by the Court as appropriate and timely.

Conclusion

Accordingly, for all these reasons, it is respectfully submitted that the government's application to preclude the expert testimony of proposed defense expert Steven Bellovin should be denied in its entirety.

Respectfully submitted,

Joshua L. Dratel

JLD/lal

cc: Serrin Turner
       Timothy T. Howard
       Assistant United States Attorneys