

# **An NCRA White Paper**

## **The Secure Delivery of Transcripts Using Wireless and Internet-Based Realtime Methods**

**Prepared by the Wireless Task Force**

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## **Executive Summary**

NCRA commissioned the Wireless Task Force to examine in detail whether wireless realtime services provided by Federal and State Official Court Reporters constituted “broadcasting” of court proceedings and created a security breach in the delivery of a realtime transcript. The Task Force found that on- site and remote wireless realtime services are secure, are controlled by the Court, are beneficial to the litigants, and are increasingly becoming a necessity in the modern courtroom. The details of these findings are described within this White Paper.

In mid-June 2010, the U.S. District Court, Central District of California, Western Division, instituted an immediate temporary suspension on the Official Court Reporters’ use of wireless routers in the courtrooms in order to give the Court time to study the implications of this technology. Among other concerns, the Court had questions ranging from security of the information transmitted, to interference issues, to whether or not the Official Court Reporter streaming the realtime feed to approved participants (with the Court’s consent) outside of the courtroom constituted “broadcasting.” Although the suspension was lifted in July and the use of StenoCast Bluetooth wireless technology was approved, the general question of security remained for many Federal and State Courts.

Based on a brief NCRA and USCRA survey of Federal and State Courts, it was found that the issue has not been broached by the vast majority of Courts, leading to uncertainty among the Official Court Reporters who provide these services. This document illustrates the benefits that wireless realtime provides on a daily basis and can be used as a guide to answer the questions that judges and other court staff may have about their Official Court Reporters providing realtime via wireless technology, both on site and streaming.

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## Section I: Description of the Variety of Wireless and Internet-Based Realtime Services Routinely Provided by Official Court Reporters in the Courtroom

### *What Is Wireless Realtime and How Is It Delivered*

Wireless and Internet-based realtime services are provided throughout the country by both government-employed Official Court Reporters<sup>1</sup> and private-sector court reporters (commonly referred to as freelance reporters). Official Court Reporters have grasped the challenges of the court system's dilemma in providing "access to justice" for all participants in the judicial arena. To achieve this goal, Official Court Reporters have partnered with the courts by providing "realtime reporting" to participants in the litigation process via the use of on-site wireless realtime technology, on-site Bluetooth realtime technology, and Internet-based off-site/remote realtime technology.

Some realtime products and services offered by Official Court Reporters can be defined as such:

- **Realtime:** the instant translation of the court reporter's stenographic notes of the proceedings into text onto the reporter's laptop.
- **Interactive Realtime:** the realtime text that is output to others for on-site or remote viewing and/or annotation.
- **Wireless Interactive Realtime:** a product and/or service used on site in the courtroom to output realtime to the judge, clerk, and counsel of record in the case via a court reporter's local area network. This network is independent of the court's network and end users, including the judge, do not access the court's network at any time.
- **Bluetooth Wireless Realtime:** a product and/or service used on site in the courtroom to output realtime to the judge, clerk, and counsel of record in the case via StenoCast's Bluetooth wireless technology.
- **Internet Realtime Streaming:** a product and/or service that allows court-approved participants to remotely view and/or annotate the testimony in realtime from any location.

Official Court Reporters offer these services nationwide on a daily basis using the methods described as follows:

1. **Local Area Network (LAN):** Available since approximately 2006, a LAN promotes a secure realtime environment with few troubleshooting issues. There are multiple vendors of wired and wireless realtime via a local area network, including Stenograph's CaseViewNet and ProCAT's Denoto. These vendors have taken extensive precautions to ensure the security of the data stream, as well as the realtime output, using IEEE 802.11 standards with 256-bit encryption,

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<sup>1</sup>For the purpose of this paper, the term "Official Court Reporter" refers to the reporter acting in an official capacity creating the record in the courtroom, regardless of their employment status or specific title under local rule or statute (e.g., official reporter, court reporter pro tem, per diem reporter, etc.).

optional WPA or WPA2 protocol to secure and password protect the reporter's realtime output, and password-controlled user rights that limit the viewing and saving of the realtime file.<sup>2</sup>

2. ***StenoCast's Bluetooth Wireless:*** Available since approximately 2005, StenoCast's Bluetooth Wireless system provides a secure wireless serial transmission from Point A to Point B via the pairing of transmitters and receivers by StenoCast. This system is deployed in hundreds of courtrooms around the world and is approved by Federal Courts for use in courtrooms.<sup>3</sup>
3. ***Courtroom Connect Remote Counsel:*** This method of off-site/remote delivery of the reporter's realtime feed has been available since approximately 2000 and is being used in multiple State and Federal Courts. Courtroom Connect works closely with the Court's IT Department to set up a secure high-speed wired or wireless network environment, which allows the reporter's realtime feed to be viewed by Court-authorized individuals outside of the courthouse (often referred to as the litigants' "War Room"). Access to the network is controlled with users choosing to connect through a Cisco BBSM SSL-encrypted Web log-in page or an EAP-based authentication.<sup>4</sup> Remote delivery of the realtime feed promotes access to justice and is discussed in more detail later. Private-sector deposition reporters have been successfully providing Internet realtime streaming to the legal community via Courtroom Connect's Remote Counsel products over the past decade.
4. ***Thomson Reuters' LiveNote Stream:*** This method of off-site/remote delivery of the reporter's realtime feed has been available since approximately 2000 and is being used in multiple State and Federal Courts. Courts throughout the United States and the world use LiveNote realtime viewer software for on-site interactive realtime. LiveNote Stream uses the high-level SSL 128-bit RSA encryption for the transcript text.<sup>5</sup> Most notably, in the private sector, LiveNote Stream was the product used in the Federal Court case *In Re: Enron Securities, Kevin Lamkin vs. UBS Paine Webber* for depositions and the trial.
5. ***Cabling:*** Using serial cables has been available since the 1980s. The cabling method is problematic in the area of troubleshooting COM ports. Additionally, there is the more recent problem with most computers not providing serial ports. The lack of a serial port requires the utilization of RJ45 adapters and USB-to-serial adapters. History tells us that these adapters and any combination thereof create a significant compatibility issue with the court reporter's realtime software and the end-user's "realtime viewer" software (LiveNote, CaseView, Summation, et cetera). For this reason and others, including lack of functionality, serial cables are being phased out as court reporters are moving towards LAN or Bluetooth Wireless.

#### ***Advantages of Realtime Products and Services to the Courts, Litigants, and the Public***

In providing realtime services, both on site and off site, the Official Court Reporter creates an overall environment of "instant access." In this world of technology and the law, Official Court Reporters are at

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<sup>2</sup>See "Understanding CaseViewNet Security" attachment.

<sup>3</sup> See "A StenoCast White Paper" attachment.

<sup>4</sup> See "Details of Wireless Network" attachment.

<sup>5</sup> See "LiveNote Stream Security" letter attachment.

the beck and call of the Court and litigators to provide access 24/7/365 to their transcripts. Interactive realtime, wireless realtime, and Internet realtime streaming is the foundation for providing this access. Benefits of allowing wireless and remote realtime include:

- ***Access to the judicial process:*** Internet realtime streaming provides the courtroom staff and the litigants, as well as any experts or court-approved “public” participants, secure access to the court proceedings from any location, which equates to cost savings to the court and the litigants.
- ***Complies with the Americans with Disabilities Act:*** The ADA mandates access for the deaf and the hard-of-hearing. Communication Access Realtime Translation (CART) enables the courts to comply with the ADA by providing realtime access to the court proceedings to the deaf or hard-of-hearing courtroom participant. Because wireless CART does not require any cabling, it is expected that there will be cost savings to the court. Additionally, the wireless CART provider can be seated in a convenient location, rather than in the jury box or at counsel tables next to the deaf or hard-of-hearing participant.
- ***Cost savings to the Court and the litigants:*** Access to the realtime feed from any location allows the courtroom staff to utilize the realtime text for the clerk’s minutes; court-approved participants can remotely attend the proceedings and receive the realtime feed; counsel’s support staff can monitor the proceedings, avoiding travel costs; and court-approved expert witnesses can view their counterpart’s testimony remotely, avoiding travel costs to attend the proceedings. Additionally, over the past few years, courthouses have been completely redesigned to meet the new modes of legal practice and access for public participants. Some of those changes include raised “computer” flooring that contain the wiring to feed the courtroom and courthouse networks required to tie all the participants into the system. Streaming realtime means that the court does not need to make these changes to accommodate reporter services.
- ***Functionality, accuracy, and production:*** By its very nature, the wireless environment permits more functionality to the court reporter and the end user(s). This functionality often equates to accuracy and thus quality production, such as:
  - Wireless realtime eliminates cables being spread throughout the courtroom to connect the end user(s) to the realtime feed;
  - Wireless realtime provides the most accurate realtime product available by “refreshing” the end user(s)’ transcript with any editing changes the Official Court Reporter makes during the proceedings; and
  - When connecting through the wireless LAN, the end user(s) can receive the entire realtime transcript even when connecting after the proceedings have begun.

## **Section II: Level of Security Typical with Remote Realtime and On-Site Wireless**

Remote realtime and on-site wireless products and services come with specific security protocols to maintain complete court control over the realtime feed. Both remote realtime and on-site wireless products are designed specifically to adhere to general federal and state court rules and policies, and the

realtime is only streamed with the consent of both the Court and the Official Court Reporter. The leading vendors that offer secure remote realtime and secure on-site wireless all offer similar security protections to ensure that the integrity and neutrality of the Court and Official Court Reporter are maintained.

For instance, to gain access to the realtime proceedings, the user must sign onto the court reporter's secure server via a computer independent of the court's network. Often this requires specific information that allows the Court and Official Court Reporter to identify users. This may include the user's name, address, phone number, and e-mail address. Some technologies allow the Official Court Reporter to set an expiration date for all passwords that are used to ensure that individuals cannot access the realtime network at any time without permission from the Court. Vendors that provide on-site wireless and remote realtime list those accessing the transcript, allowing the Official Court Reporter to monitor the participants and immediately stop the proceedings if an irregularity occurs. If court participants are sending the realtime feed to their office or expert witnesses via their own desktop sharing software, the identity of those end users should also be provided to the Official Court Reporter and Court.

Vendors offering remote realtime do so with a secure encrypted feed. All notable vendors provide this service on either a 100 percent independent wireless or 100 percent independent wired Internet connection, depending on the Court's preference. All traffic is segmented on Local Area Networks (LAN). On-site wireless programs are designed with hardware-level security that requires the authentication of all wireless devices attempting to access the feed. The privacy of the proceedings is maintained as only permitted users and authorized devices are granted access to the Official Court Reporter's realtime feed. Both remote realtime and on-site wireless utilize the same technology that is used in all secure banking transactions and is the industry standard for maintaining Internet security.<sup>6</sup>

Regardless of how the feed is being distributed, access to it needs to be closely monitored and governed in a manner which leverages automation as much as possible to detect unauthorized access, unauthorized access attempts, and demonstrates a strong level of control over the proceedings.

### **Section III: Why These Services Will Not Create Problems for the Court**

#### ***Security Issues:***

While the concern that courts may have with the use of wireless and Internet-based services provided by Official Court Reporters is understandable, the vendors of these services have built into their software programs safeguards for authentication, confidentiality, and authorization. Overall, these services are designed to meet and exceed any courtroom security concerns, but each vendor should take into consideration each court's security measures and any federal, state, or local rules and policies.

- ***Authentication:*** Involves verifying the identity of communicating devices. The highest level of attention is given to who has access to the realtime feed. For wireless and Bluetooth wireless realtime inside the courtroom, the Official Court Reporter has complete control over setting up and verifying the sending and receiving devices.

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<sup>6</sup> Some courtrooms currently stream the digital audio recording off-site without taking these same security issues into consideration.

- **Confidentiality:** For the delivery of the off-site realtime feed, a secure network with verification measures is set up completely independent of the court's internal IT network, therefore making it impossible for information on the court's existing systems to be accessed or compromised.
- **Authorization:** The feed is only available outside the courthouse by users authorized by the Court and the Official Court Reporter.

***Interference Issues:***

The Wireless LAN and Bluetooth products are tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.<sup>7</sup> The fact that Official Court Reporters use Part 15 compliant devices is one more reason for the courts to embrace wireless realtime.

***Realtime Transmission Differs From Broadcasting:***

It is important to note that merely transmitting the Official Court Reporter's realtime feed to a secured and authorized remote location does not constitute "broadcasting" of court proceedings. The remote realtime feed has a fixed beginning and a fixed endpoint; it is not an open connection. It is a one-way transmission of data from the Official Court Reporter to the Court and/or a one-way transmission to attorneys (inside the courtroom or remotely) who are authorized by the Court to receive the realtime feed.

For many years trials in State and Federal courts throughout the country have utilized a secure, high-speed Internet connection in the courtroom to allow for the use of the remote realtime feed.<sup>8</sup> In September 2010, the Judicial Conference of the United States approved a three-year pilot project to evaluate the effect of cameras in federal district courtrooms and the public release of digital video recordings of certain civil proceedings.<sup>9</sup> On September 14, 2010, the Strategic Plan for the Federal Judiciary was approved by the Judicial Conference of the United States and addresses the following issue:

“Issue 4. Harnessing Technology’s Potential: How can the judiciary develop national technology systems while fostering the development of creative approaches and solutions at the local level?”<sup>10</sup>

The description of this issue addresses the changing needs of judges, staff, and the public by implementing innovative technology applications. As has been discussed throughout this paper, the use of an Official Court Reporter’s secure realtime feed, the only technology available that provides instantaneous realtime translation, increases productivity of the judge and litigants, facilitates work processes, and improves access to courts.

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<sup>7</sup> Part 15 of the FCC rules mandate that telecommunications devices must be certified to not create interference with one another. All products currently used by Official Court Reporters to provide on-site and off-site realtime wireless are approved by the FCC, meaning that as long as Part 15 remains the regulatory practice, interference concerns are a non-issue.

<sup>8</sup> Southern District of New York: *City of New York v Amereda Hess (Exxon Mobil)*; Northern District of Illinois: *United States v Ralph Cioffi and Tanin (Bear Stearns)*; and Northern District of California: *Larry Bowato v Chevron Corp.*

<sup>9</sup>The Third Branch. *Judiciary Approves Pilot Project for Cameras in District Courts*. September 2010.

<sup>10</sup>Strategic Plan for the Federal Judiciary. September 2010. Judicial Conference of the United States. p. 11.



## **Section IV: Unintended Negative Consequences of a Ban on Services**

Today wireless communication is not only being accepted by virtually all organizations and institutions, it is becoming the industry standard. Banning of wireless access has many unintended consequences. Two of major significance: access to the courts by the deaf and hard-of-hearing community and the ability of litigators and law firms to more efficiently and economically serve their clients.

- Participants outside of the courtroom depend on Internet realtime services to conduct business as usual from a remote location. This includes, but is not limited to, expert witnesses scheduled to testify in trials, trial teams located offsite, and even clients who have difficulty attending the proceedings daily.
- Streaming realtime can provide instant access on a secure and equal basis to virtually anyone the Court grants approval to, whether in the courtroom or remotely. This is just one small part of efficient use of technology that lessens the cost of access to the courts for all parties. More than ever before, through the use of technology, disabled participants have greater access to the courts. Just as realtime translation has allowed deaf and hard-of-hearing citizens to participate as judges, parties, witnesses, attorneys, jurors, streaming text allows not only parties with disabilities access, but also the public.

Perhaps the most egregious unintended consequence of banning access to wireless realtime will be that the courts could fall behind in what has become the standard of practice for delivery of information in the private sector. Younger generations of attorneys and litigants are not only comfortable with the rapid delivery of information in all forms, they expect it. In the current world of podcasts, webinars, searchable voice files, and limitless other means of communicating, the courts cannot afford to fall behind in the use of technology.

As our judicial system continues to provide access to litigants and the public through the use of electronic filing and other useful systems of information delivery, the provision of the realtime record plays an integral role in providing access to justice and the promotion of efficient use of judicial and client resources. The most efficient method of delivering the realtime record is through secure wireless and Bluetooth means of communication.

## **Section V: “Best Practices” for Deployment and Effective, Responsible Management of Wireless and Internet-Based Realtime**

As an officer of the court and guardian of the record, it is the duty of the Official Court Reporter providing realtime to provide responsible management of the realtime record. Working with the approval of the Court, the Official Court Reporter is able to provide an instantaneous realtime transcript, ensuring access while maintaining the confidentiality and integrity of the court proceedings.

The following outline of sample best practices<sup>11</sup> is provided as guidance for LAN Ethernet cabled, wireless realtime, and/or Internet realtime streaming once parties have requested realtime services.

***Bluetooth Wireless Realtime:***

1. Secure approval of the presiding judge for wireless realtime.
2. Contact and coordinate with the court's IT department.
3. Ensure the integrity of the official record at all times by providing a secure realtime feed using paired Bluetooth transmitter and receivers.
4. Identify all persons who will access the realtime stream.
5. Realtime receivers on non-court personnel computers should be removed during proceedings that are not related to the realtime proceedings, i.e., hearing in another matter held during recess in proceedings or other proceedings as directed by the Court.

***Wireless LAN Realtime:***

1. Secure approval of the presiding judge for wireless realtime.
2. Contact and coordinate with the court's IT department.
3. Provide a secure realtime feed using appropriate protocols.
  - a. Official Court Reporter's realtime router should be:
    - i. Independent of the court network. No end user of the realtime feed, including the judge, should access the realtime reporter's feed through the Court's network. A standalone receive computer should be provided to the judge to allow access independent of the court network.
    - ii. Equipped with a LAN Ethernet port, which provides the option to connect via the Ethernet cable.
    - iii. Using secure WPA or WPA2 protocol with password protection.
  - b. Realtime passwords for all participants should be set at a high security level, containing at least one capital letter, one number, and one special character. Default passwords should be changed and an account lockout mechanism enabled that enforces the automatic lockout of an account after 3-5 failed login attempts<sup>12</sup>.
  - c. Realtime passwords for non-court personnel should have an expiration date, when possible.

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<sup>11</sup> Note: This is just a sample list of best practices and is not all inclusive.

<sup>12</sup> Default CaseViewNet passwords meet the standard. CaseViewNet will refuse or "lock out" connections for a time after a few repeated attempts. This defeats "brute force" password attacks (Wireless router passwords are not applicable to the technical aspects of CaseViewNet. This functionality would be found in the wireless router).

- d. A wireless intrusion detection and/or prevention system should be incorporated and configured to alert on suspicious activities detected and block attacks where possible.<sup>13</sup>
4. Identify all persons who will access the realtime stream.
5. Ensure the integrity of the official record at all times by using realtime vendors and equipment that comply with the IEEE 802.11 standards and provide at least a 256-bit WPA or WPA2 encrypted data stream over SSL.
6. Realtime feed to non-court personnel should be disabled during proceedings that are not related to the realtime proceedings, i.e., hearing in another matter held during recess in proceedings or other proceedings as directed by the Court.

***Internet Realtime Streaming:***

1. Secure approval of the presiding judge for Internet realtime streaming.
2. Contact and coordinate with the court's IT department.
3. Provide an industry standard secure realtime feed to the court-approved users, comparable to "banking" level security or higher, SSL 128-bit RSA encryption.
  - a. Official Court Reporter's Internet connection for the realtime stream should:
    - i. Be independent of the court's network.
    - ii. Require users of the network to use a high level of encryption, e.g., 802.11 with rotating key encryption.
    - iii. Provide off-site user authentication.
  - b. Realtime streaming event passwords for all participants should be set at a high security level, containing at least one capital letter, one number, and one special character. An account lockout mechanism should be enabled which enforces the automatic lockout of an account after 3-5 failed login attempts.
  - c. Management of the realtime streaming transcript should include the ability for the Official Court Reporter to lock out the download, print, and save features.
  - d. An Intrusion Detection and/or Prevention system should be incorporated and configured to detect suspicious activities and block attacks where possible.
4. Identify all persons who will access the realtime stream.

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<sup>13</sup> CaseViewNet will refuse or "lock out" connections for a time after a few repeated attempts. This defeats "brute force" password attacks (Intrusion detection/prevention is not really applicable to the technical aspects of CaseViewNet – this functionality would be found in the wireless router or, more likely, corporate network).

## **Section VI: Conclusion**

Official Court Reporters offer highly sought-after skills and services to the Court and the legal process as a whole. While there are legitimate concerns regarding the security issue of broadcasting court proceedings outside the courtroom, it is untenable to apply the same concerns to the secure, wireless realtime feed provided by the Official Court Reporter.

Vendors of wireless realtime technology ensure that the integrity of the courtroom is maintained by utilizing the highest security technology available, the same technology used by major financial firms to conduct the most secure banking transactions. The courts would be remiss in failing to make the distinction between broadcasting of proceedings and the secure realtime feed from an officer of the court, the Official Court Reporter. Not only do many of the security systems put in place by vendors of wireless realtime technology require a temporary password and log-in, personal identifying information is required as well. The Court, through the Official Court Reporter, can monitor recipients of the realtime feed and terminate the feed at any time if an irregularity is suspected.

In the interest of judicial economy, wireless realtime is beneficial to the Court and litigants. Without the realtime services provided by Official Court Reporters, many courtrooms would potentially grind to a halt. Restricting its use may have the unintended consequence of the courts falling behind in rapidly advancing technology. Today's litigants fully expect easy access and rapid dissemination of information in all facets of their professional and personal life. The courts risk affecting their judicial performance by banning the realtime wireless feed from an Official Court Reporter.

Accountability, transparency, and accessibility are demanded by the citizens of this country and are vital to the successful operation of our courts today. Allowing the use of an Official Court Reporter's secure realtime feed, either in the courtroom or by remote access, assists in conducting the business of the courts while remaining accountable, transparent, and accessible to the citizenry. Today, wireless realtime is not merely requested by the courts and litigants, in many jurisdictions it is expected.

## **Section VII: Peer Review**

Overall, I agree with the conclusions reached within the NCRA White Paper, "The Secure Delivery of Transcripts Using Wireless and Internet-Based Realtime Methods," based on research I conducted on the topics, technology, and concepts covered. Concisely, I would like to stress that the wireless technology promoted by the Wireless Task Force is safe and secure if used and implemented in a secure manner. Judges, court administrators, court IT still need to do their due diligence when it comes to how the wireless realtime is provided in their own courtroom to ensure proper procedures are followed. Wireless technology used by court reporters can be implemented in a secure manner as the "The Secure Delivery of Transcripts Using Wireless and Internet-Based Realtime Methods" suggests provided proper security and related controls are in place.

Carl Davis, C|EH, CISSP, MCSE, CCSA  
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## Section VIII: Links to Vendors

- **CaseViewNet:**
  - Email: <http://www.stenograph.com/emailtechsupport.aspx>
  - Phone: (800) 323-4247
  
- **Courtroom Connect:**
  - Email: [support@courtroomconnect.com](mailto:support@courtroomconnect.com)
  - Phone: (877) 838.9080
  
- **LiveNote Stream:**
  - Email: [Support@livenote.com](mailto:Support@livenote.com)
  - Phone: (800) 290-9378
  - The product that should be referenced is “Stream”.
  
- **ProCAT’sDenoto:**
  - Email: [support@procat.com](mailto:support@procat.com)
  - Phone: (800) 966-1221
  
- **StenoCast Bluetooth:**
  - Email: [support@stenocast.com](mailto:support@stenocast.com)
  - Phone: (858) 578-4699