NEWSLETTER

CBRS – Certified Professional Installer Certification

By **Keith Parsons, CWNE #3** · 2019-10-23 · originally on LinkedIn



In the new Citizens Broadband Radio Service (CBRS) ecosystem, there is a well-defined role for certified professional installers (CPI)s.

In order to talk a bit about why there is a need for CPI's – we need to do a quick review of how CBRS is supposed to work.

There is a system in place to protect Incumbent users and those who have paid for their access to the spectrum. This service is called Spectrum Access System (SAS). There are multiple SAS vendors, but they all will share data so they can do their job of protecting the rights of spectrum users in near-real-time.

A SAS needs certain key information about any devices that transmit in the CBRS spectrum bands. These devices go by the name CBSD. These key parameters are critical to the SAS system. The main role of CPI's in this system are to be 100% responsible for the completeness and correctness of the installation parameters forwarded to SAS.

As a CPI you do not have to be physically present at all CBSD installations – but, it is still your role to insure proper information flow to the SAS.

CPI's can also work to troubleshoot CBSD's, be an ambassador for the entire CBRS ecosystem and help spread the word of the value of a Shared Spectrum system like CBRS.

In order to train, and certify CPI's – there are groups called Training Program Administrator (TPA). The role of the TPA is to train, certify, and maintain access and control over CPI's.

I happened to choose Google as the TPA I was going to use for training and certification. There are fees associated with this process. Google, working with Coursera charges $599

for the course, exam, certification, but also the ongoing role of a TPA to stay in contact, and update all their certified CPI's.

Note: There are other TPA's you can choose from – including:

- CommScope
- Federated Wireless
- Google
- Nokia

Your Certified Professional Installer certificate stays with you as an individual. It is NOT tied to your employer or company.

After passing the course and certification exam you will receive a Digital Certificate that will be required when updating any adds, moves or changes to your CBSD's in your organization. All communications changing the SAS database need to be digitally signed by authorized CPI's. So there WILL be a need for any organization working in this ecosystem to have CPI's available.

There are processes and procedures in place to make sure the integrity of the CPI program, and individual CPI's are doing their jobs accurately and appropriately – with associated remediation steps if anyone steps out of line.

My personal Experience in becoming a Certified Professional Installer for CBRS

I signed up with an account on https://www.coursera.org/

Then paid my $599 fee to access the CBRS CPI course.

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- What is CBRS? An overview of shared spectrum and CBRS ecosystem, users, systems and devices
- The role of CPIs in CBRS: What are CPIs, why and when are they needed?

· How to be a CPI: Determining installation parameters for the SAS and troubleshooting tips

This course mostly comprised a couple of hours of video training, with lot of quizzes in each and every section to keep you focused. There were 6 modules and perhaps 25 little quizzes along the way. Both mid-section, and at the end of each module. You can NOT 'skip ahead' – this is a very controlled training environment.

In total, I probably spent 2-3 hours in total watching the video training, and downloading and reading some of the support materials.

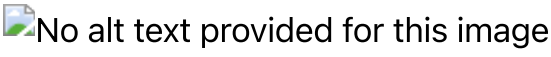
When the course is completed, you have to sign up through a TERRIBLE SYSTEM to have a 'proctored' exam. The signup process took me nearly an hour fighting the system – turning off all sorts of protection things in my browser, having a 'proctor' log in remotely, and WATCH you take the test, including moving everything off your desk space and allowing them to see through your laptop's camera to confirm your testing space and that you are alone.

The exam itself followed quite closely to the quizzes you have taken already. If you are conversant in RF, antennas, using google maps, and understood the concepts as covered in the training – the exam was very straight forward and I scored 100%.

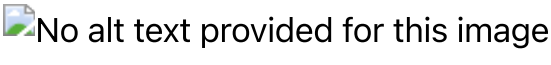
A day after the exam, I received a digital certificate, and instructions on how to install it on Windows, macOS, Android and iOS. This is the 'key' to doing your role as a CPI. There was some pretty tight security around getting, opening, installing and using this digital certificate. As it should be.

I'm now ready and prepared for the CBRS system that is coming to Wireless LAN Professionals soon!

Resources to Help in Your Studies



https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=2dd346ae3b51f2866ab6fb907e755526&mc=true&r=PART&n=pt47.5.96



https://cbrs.wirelessinnovation.org/release-1-standards-specifications

https://cbrs.wirelessinnovation.org/policies-and-procedures

https://cbrs.wirelessinnovation.org/cbrs-reports-and-recommendations



https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm



https://www.freemaptools.com/elevation-finder.htm



https://www.fcc.gov/media/radio/dms-decimal



https://www.fcc.gov/media/radio/haat-calculator



https://www.fcc.gov/media/radio/findvalues

Small Glossary for CBRS Ecosystem



Shared Spectrum

Sharing of spectrum between different user groups while maintaining priorty access

CBRS

Citizens Band Radio Service

EUD

End User Device – think Client or Station in Wi-Fi – these to NOT talk with SAS

CBSD

Transmitting devices in the CBRS band – think Access Point – they must ask permission from SAS and keep a 'heartbeat' to use CBRS Spectrum

SAS

Spectrum Access Service – cloud service to control access to spectrum and protect priorities – big database of users, areas, and priorities

Incumbents

Those already assigned rights in the CBRS spectrum

PAL

Priority Access License – those bid at auction for a right to use spectrum

GAA

General Authorized Access – users can access any non-priority spectrum by asking SAS

TPA

Training Program Administrator – WinnForum Approved group to do training, exams, and maintain control over CPIs

CPI

Certified Professional Installer – Trained, certified, and evaluated individual who must digitally sign for all changes to the SAS database for each and every CBSD

By Keith Parsons, CWNE #3, Wireless LAN Professionals. Free to read and share. Facts