Course	Question #	Question	Answer(s)	Answer(s)	Answer(s)	Answer(s)
CIP Safety 0 October 19	1	What is the difference between IEC61784-3-2 and THE CIP NETWORKS LIBRARY Vol 5?	Volume 5 is the official specification of the standard maintained by ODVA and overseen by the CIP Safety Special Interest Group (SIG) - it is released as part of the the specification enhancement process (updates published twice yearly) and is certified by TÜV Rheinland. A subscription to Vol 5 is needed for use of the CIP Safety protocol in products.	The IEC standard is based on the CIP Safety Standard...	So there is commonality between the two. In practice, owing to the different review cycles there may be some divergence	We would recommend using Vol 5 for your product developments, though IEC61784-3-2 can give you a good overview
CIP Safety 0 October 19	2	With regard to the PFHd of CIP Safety, for calculation purposes is that number included in the PFHd of each CIP Safety component or should it be added separately into the calculation? Slide 31	live answered	*The CIP Safety PFHd should be included in the PFHd of each network device (e.g., I/O block, PLC, etc.) It does not need to be separately included in the safety loop PFHd*		
CIP Safety 0 October 19	4	What is basis for using only 1% of total SIL budget for safe fieldbus? What is the justification for this?	live answered	*This is the guidance from IEC 61784-3.*		
CIP Safety 0 October 19	5	Is there a best practice when sending data over the same network to a PLC? For example, on the same network you are seing data on Ethernet/IP and also CIP Safety. When will one protocol start to have an impact on the other?	Thanks for the question. EtherNet/IP (standard) and CIP Safety can be combined on the same network. The point at which you may start to see an impact is if there is congestion on the network...	This is handled by setting a Quality of Service parameter in the packet. CIP Safety has a higher priority than EtherNet/IP	What that means is that if you have a problem on the network, a user will start to see safety drops before anything else stops working	That doesn't mean that the safety has a problem - quite the opposite. You want to go into a safe state if there is a problem. In summary, it you will start to see problems if your application sizing isn't correct, or if you have a poor network design
CIP Safety 0 October 19	10	Does the successfull execution of the ODVA Conformance Test (CIP safety included) guarantee to be compliant with IEC 61784-3? Or should we take care of other safety considerations in our design?	live answered	*The ODVA Conformance Test for CIP Safety provide can provide evidence to your functional safety partner that the requirements of Vol 5 are met. Typically this result is evaluated during integration test phase (see CIP Safety Session 4)*		
CIP Safety Session 2 October 20	1	can i use CIP Safety also with NAT ?	*This is a vendor-specific consideration:*	You can. At the time when the connection is configured, the scanner configuration will take this into account so that the safety network number is correct.		
CIP Safety Session 2 October 20	2	If a device supports safe and standard IOs, do they need separate CIP safety and standard EIP connection? Can they both be addressed by only one CIP Safety connection?	If your device supports both standard and safety I/O then these are independent connections			
CIP Safety Session 2 October 20	3	Does OVDA has available a COTS source code library for integration and implementation of CIP safety in own firmware in order to fast up the development?	There are many vendors, which we will go over in session 4, which offer source code and hardware implementations to speed up development.			
CIP Safety Session 2 October 20	4	Ok. That will mean that if a device has both standard inputs and outputs and safety inputs and outputs, there would be total 4 connections. 2 standard (producing/consuming) and 2 for CIP Safety. Is it correctly understood	It depends, I would expect a "typical" design to use 3 connections - 2 for safety and 1 for standard. I believe there may be some scenarios in which a single safety connection is also acceptable.			
CIP Safety Session 2 October 20	5	Does OCPUNID allows theorotically to have multiple explicit owner connections between one target (with multiple outputs) and one/more scanners to control output that the scanner owns?	*OCPUNIDs are maintained (non-volatile) in an array. Each safety output in a target will have its own OCPUNID. So - yes - each output could theoretically be owned by a different scanner (originator).*			
CIP Safety Session 2 October 20	6	May I ask presenter to please explain one more time the statement that the data is always flowing in both direction in CIP Safety.	*The correct statement is that application data (safety input or output data) uses one of the two CIP connections created by Safety Forward Open. Time Coordination Messages are sent on the other.*			

CIP Safety Session 2 October 20	7	Are there any requirements coming from CIP Safety standard on the hardware architecture such as redundancy, diversity. Are there any requiements for data synchronization between the two channel in case of redundant system. Does it depend on the number of connection or expected packet interval	live answered	*Additional guidance in session 4. Also see Volume 5 sections 2-2.1 thru 2-2.3*		
CIP Safety Session 2 October 20	8	Can we mix between safety feature and PRP feature, I mean there is no restriction ? do we have for example controller including both (safety and PRP redundancy)?	Absolutely. CIP Safety doesn't care about the underlying transport mechanism - so yes, you can deploy it over PRP			
CIP Safety Session 2 October 20	9	When using switch to create VLAN in Safety netwrok, is it mondatory that such device, I mean switch to have safety capability ?	No, CIP Safety follows a "black channel" concept. The network does not need to be safety certified			
CIP Safety Session 2 October 20	10	Thank you, on this case did this decrease safety level SIL/PLx of complete machine ? I mean when using switch not certified Safety and switch certified safety?	live answered			
CIP Safety Session 2 October 20	11	About the demo test setup which we could not try because of online session, instead of actual hardware setup, is it possible to use an emulated system (PLC/Device) to get some easy hands on for the participants.	This is an area that ODVA are investigating at present. The long term aspiration is for the community to have hardware available for testing purposes but it will take us some time to achieve this			
CIP Safety Session 3 October 21	1	Is there any SNCT software in the market which is applicable for different CIP safety devices from different vendors?	live answered	In regards to 3rd party providers, Molex offers a SNCT software, which is well received. There are other vendors as well, but not as well known.	*This is a vendor-specific consideration:*	Logix Designer configures the ControlLogix or CompactLogix controllers and has the ability to configure devices that have an EDS file with CIP Safety constructs inside.
CIP Safety Session 3 October 21	2	In type 1 connection, how configuration is transfered from originator to target ?		I am double checking, but I am pretty sure this is the one that delivers it in the Data Segment that is appended to the Forward Open request.	I confirmed this. The configuration data is placed in the Originator and delivered to the Target when the connection is established.	
CIP Safety Session 3 October 21	3	Is it correctly understood that the Explicit messages do not use any time correction message?		That is correct. Within CIP Safety , explicit messaging is not for control.		
CIP Safety Session 3 October 21	4	The Slide 34 for Single-Cast Safety connection shows Time Correction message. As I understand, the single cast connection do not use the Time Correction message.		You are correct. This is a typo in the slide. Time Correction message (section) is used only in multi-cast safety connections		
CIP Safety Session 3 October 21	5	The CIP Safety standard Vol5 V2.18, doesnt show the Timestamp section as part of the Base format. But for the Extended Format it shows. In the presentation the Timestamp section is shown as part of the Base format.	live answered	*Base format uses a separate Time Stamp section that is appended to the Data section to create a data message. In Extended format, the data and time stamp are combined in the same section. It is important to distinguish "section" from "message" in this area of the spec and presentation.*		
CIP Safety Session 3 October 21	7	Is there any SNCT software in the market which is applicable for different CIP safety devices from different vendors?	live answered	In regards to 3rd party providers, Molex offers a SNCT software, which is well received. There are other vendors as well, but not as well known.	*This is a vendor-specific consideration:*	Logix Designer configures the ControlLogix or CompactLogix controllers and has the ability to configure devices that have an EDS file with CIP Safety constructs inside.
CIP Safety Session 4 October 22	2	You mentioned a wireshark disector - is this a standard tool or perhaps a customized Excel spreadsheet or somthing created by the user to interpret everything in Wireshark		The dissector is the code within Wireshark that unpacks and interprets the Ethernet frames. there are dissectors for literally hundreds of protocols in Wireshark.		
CIP Safety Session 4 October 22	3	Where can I find the 3 wireshark files?		Downloads for Volume 5 Training Handouts and Wireshark CIP Safety Demo are available on https://www.odva.org/cs-2020-training/. Attendees will receive links at the conclusion of training, as well.		

CIP Safety Session 4 October 22	4	Just a quick question- Are there any known issues that the Wireshark doesnt show "CIP CM" messages for any reason? In my current setup, I have mirrored a switch port on which originator is connected, to another switch port on which Wireshark is connected. Here, I do not see "CIP CM" messages but direclty see "CIP I/O" messages. I tried "enip" filter and other cip filters (but also tried unfiltered).	live answered	I guess to answer more coherently - I'm not aware of any specific issues like this - it is important (without any filtering) to see in Wireshark ALL of the expected source/destination packets. I have seen some weird issues in managed switch mirror port implementations - sometimes I have to spend time making sure this is configured correctly. If you want to share any data with me - send to David's attention at conformance@odva.org		
CIP Safety Session 4 October 22	5	Is the disector you are talking about/presenting a Wireshark standard or you have to install a proprietary one?	live answered	The CIP Safety dissector is part of the standard Wireshark installation since around 2012		
CIP Safety Session 4 October 22	7	A non-safety connection can be established with input and output data. The wireshark trace shows different connections with input or output data but not with both. Is it necessary to establish two safety connections when the target supports input and output data?	Yes - your observation is correct. Two separate CIP Safety connections (Forward Open requests) are required. Because CIP Safety uses one of the two FwdOpen connections (O->T, T->O) for time coordination, application data only flows in one direction.			
CIP Safety Session 4 October 22	8	To what extend third party CIP Safety stacks are certified? What stages in the V-Model have to be repeated during the integration of these stacks into products?	live answered			
CIP Safety Session 4 October 22	9	Can RSTP protocol be used in a CIP Safety ring of devices? Is DLR the only protocol to be used when creating rings with CIP Safety devices?	In theory, yes. However in practice it is unlikely to deliver the convergence time needed to maintain the connection in the event of a ring fault. This means that your system will go into an emergency fault state and will need to be reset before operation can continue. DLR (and potentially other protocols) allow the ring to heal quickly enough for the safety connection to remain healthy (and for no emergency stop condition to occur)	RSTP may be able to give an appropriate level of performance with appropriate configuration. In contrast, DLR requires much less configuration. Ultimately, the needs of your application will drive your choice of protocol.		
CIP Safety Session 4 October 22	10	What is the required recovery time required? How many milliseconds ?	A CIP Safety connection will time out at 2 x the RPI, so your recovery time needs to lower than this if you want to avoid an e-stop condition			
CIP Safety Session 4 October 22	11	In case of a SIL2 device, will the TÜV Rheinland accept that the hardware and application software is developed according to SIL 2, as long as the communication part is developed according to SIL 3 ?	*This is a vendor-specific consideration:*	Yes. I know our company sells SIL2 controllers that utilize CIP Safety.	*See Volume 5 sections 2-2.1 for requirements related to Systematic Capability SC3.*	
CIP Safety Session 4 October 22	12	Is there a different Conformance Test Tool for Originator and Target Class devices? Are tests in the Appendix F covered by the test tool?	The same Conformance Test tool is used for both Originator and Target devices. Yes, the test covers the tests outline in Appendix F	*Black box tests (Vol 5 F-3) are performed by the ODVA Conformance Test. White box tests (Vol 5 F-4) are performed and attested by the vendor.*		