IPVM “Advanced Surveillance” Syllabus

Pre-Requisite: If you have any difficulty with our IP Video 101 training, this course will be too hard for you.

Goals: (1) Participants will be able to understand and communicate tradeoffs among key video surveillance options and approaches. (2) Participants will successfully complete 3 design projects that demonstrates their mastery of the material in practical situations.

Camera Fundamentals

1. SD vs 720p vs 1080p vs Multi-Megapixel
2. Frame Rate Tradeoffs
3. Low light Performance Issues
4. IR Illumination Tradeoffs
5. IR vs Thermal vs Day/Night
6. Wide Dynamics Range Tradeoffs

Camera Types

7. PTZ vs Fixed Cameras
8. Panoramic vs Conventional Cameras
9. Form Factors: Dome vs Box vs Bullet, etc.

Lens Selection

10. Varifocal vs Fixed Focal Lenses
11. Auto vs Manual vs P Iris Lenses
12. Focusing: ABF and Camera Setup

Camera Design

13. Pixels Per Foot / Image Detail
14. Camera Positioning
15. Camera Layout Issues
16. Camera Cost Tradeoffs

Streaming/Recording

17. CODECs: MJPEG vs H.264, etc.
18. Streaming: VBR vs CBR

19. Continuous vs Motion Based Recording
20. Calculating Storage Consumption

Camera to VMS

21. Camera / VMS Integration: Direct vs Standards
22. Unicast vs Multicast
23. Camera / VMS Time Synchronization

VMS Fundamentals

24. VMS: Live Video Monitoring Options
25. VMS: Investigation Options
26. VMS: Administration Options
27. VMS Cost Tradeoffs

VMS Part 2

28. VMS vs VSaaS
29. VMS vs PSIM
30. Analog Cameras: Encoders vs Hybrid DVRs
31. Remote Video Monitoring
32. Mobile Application Monitoring
33. Access - Video Integration Tradeoffs
34. Audio Surveillance Tradeoffs

Hardware

35. Specifiying VMS Hardware
36. Storage: Direct vs Networked
37. Storage: Edge Storage Tradeoffs

Transmission

38. Wireless vs Wireline
39. Wireline: UTP vs Fiber vs Coax
40. Wireless Option Tradeoffs
41. Network Switch Selection
42. Powering Cameras: PoE Considerations

Analytics

43. Analytics: Edge vs Core
44. Analytics: False Alerts vs Detection Rates
45. Analytics: Assessing Performance

IPVM Class Schedule

Each class will meet twice - at 'night' 5pm ET and the following morning at 9am ET. Attend either one, both or watch later on demand; e.g., Oct 2nd at 5pm ET and then 'repeat' at Oct 3rd at 9am ET

	Date	Topic
Class 1	Oct 2/3	Resolution and Frame Rate
Class 2	Oct 4/5	Low Light and WDR
Class 3	Oct 9/10	IR vs Thermal vs Day/Night
Class 4	Oct 11/12	PTZ vs Panoramic vs Fixed
Class 5	Oct 17/18	Box vs Bullet vs Dome vs Cube
Class 6	Oct 19/20	Lens Selection
Class 7	Oct 23/24	Pixels Per Foot
Class 8	Oct 25/26	Camera Layout
Class 9	Oct 30/31	Camera Layout Projects
Class 10	Nov 1/2	Camera Positioning
Class 11	Nov 6/7	Streaming / Recording
Class 12	Nov 8/9	Camera to VMS
Class 13	Nov 13/14	VMS Fundamentals
Class 14	Nov 15/16	Advanced VMS
Class 15	Nov 20/21	Selecting VMS
Class 16	CANCELLED	US Thanksgiving
Class 17	Nov 27/28	VMS Hardware
Class 18	Nov 29/30	Wired Transmission
Class 19	Dec 4/5	Wireless Transmission
Class 20	Dec 6/7	Analytics
	Dec 16th	Turn in Final Project