IBC visit report

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This year, I had the chance to visit one of the most prestigious broadcast convention in the world, in Amsterdam. Seven other students from the entire world and I were invited to visit the exhibition and to attend conferences about broadcast industry. I study Image and Sound System Engineering in Valenciennes, in the North of France. Each year, two of us have the chance to be picked by the IABM to go to the convention. Here is a record about highlights of my visit, and some points about technology.

The exhibition

The convention takes place in the RAI center, in Amsterdam. Fifteen halls are dedicated to the IBC, let's say that five days is just the time you need to see everything. Actually you can't see all of it. Here is a summary of the most enlightened exhibitors I got interest in.

Color grading Softwares

I had the occasion to have a demonstration of three leader color grading systems. The first, that I frequently use, DaVinci Resolve, is more and more used in the professional field and includes some powerful tools. It offers a modern approach to people without adequate resources to buy more, because there is a free version of this one. I met people from Filmlight, which owns Baselight, and DigitalVision, which presents Nocuda.

I was concerned about trying to figure out how Baselight and Nocuda could try to make the difference against a free software as BlackMagic Design. Well, even if Nocuda and Baselight seem to propose a much more complete color management workflow, more powerful tools and hardware and more liable system, BlackMagic is filling the gap, and is enough complete not only for amateurs or semi-professionals, but even for professional that are searching for cheaper solutions. I am curious about the way it will evolve, without forgetting that open source is coming too with great arguments in the battle.

Sony and Newtek

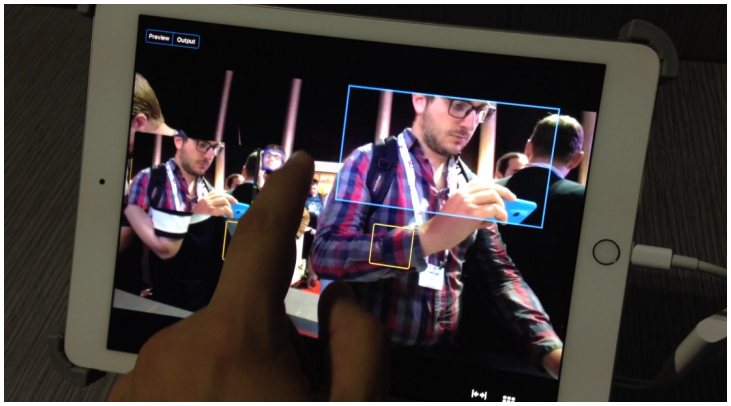
I would like to focus on two exhibitors that seem to hold two different point of view on the broadcast industry, while they provide the same services.

The first is Sony, unnecessary to present. The second, Newtek, provides live production equipment. So what did struck me ? Well let's say that the first is older school than the second. Sony, on its dedicated hall, presented a whole range of equipment for live production, everything relating to IP based workflow and HDR. While the second, presented the Tricaster, a " all-in-one, integrated video production system with everything you need to create broadcast style video ». While Sony still manufactures LSM and Graphic Effects processors, Newtek has decided to take the road of embedded equipments. The TriCaster is simply a machine that runs Windows, with capture and playback.

I have a steeper opinion about it. Even if Sony manufactures quality products, it seems that their equipment range is too piecemeal. Of course, Newtek propose cheapest products than Sony, so clients may not be the same. But the all-in-one aspect is, I think, something that will be a major part of live production evolution in the next years. Manufacturers are able to produce enough liable and secured machines. The "all-in-one" tends to have the quality of being portable. It is possible because manufacturers can compact powerful technologies, and replace equipments with virtual ones. Livestream also presented a compact video mixer, whose control screen is integrated to the machine. The fact that equipment is powerful while it takes fewer and fewer place, contributes to some innovations that worth a tour. 360 video can be achieved with little cameras, compacted in little rigs. Wide lenses and high resolutions, on little cameras, with face-recognition algorithm, allow to create a multi-camera environment with only one lens. Also, I was impressed by electronic stabilization rigs. The one from ICAN proposes movements functions that were impossible to achieve a few years ago.

360 video rig

Livestream vision mixer



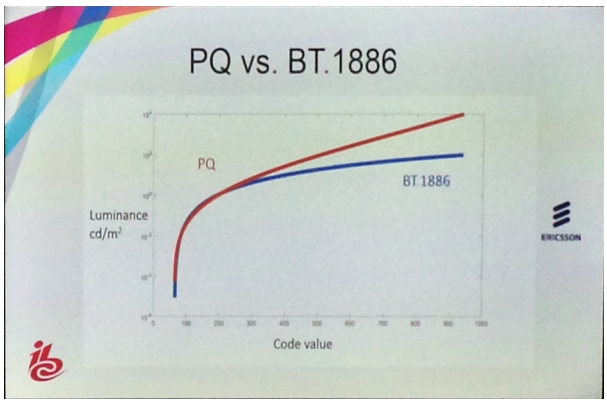
Example of directing with only one wide-angle camera

Conferences : record and a point about HDR

Most of conferences that I attended were about IT and science. The three main themes were : IP, HDR and HEVC. I took pleasure to attend to conferences that had a more demonstrative goal, as Ang lee's one. The combination of 120 fps and Dolby 3D he presented creates a sensation of immersion, that is probably only effective above a certain frame rate. For example, for The Hobbit, shot in 48 fps, I thought the sensation was jerky, and quite bad due to poor management of sets and make-up. Demonstration of HDR have been a high point on my visit. I think it is one of the most relevant technology for digital cinema. I see it as a real enhancement for story-telling and visual immersion, without so much inconvenient or loss.

I would like to develop some points about HDR. Actually, the name "HDR" is used to characterized two concepts : one for capture, and the other for playing. To capture a high dynamic range, you have to preserve detail in both shadows and highlights. There is a need for a sensor able to capture a wide range of stops, and a quantification that uses a minimum of 10 bits, in order to preserve a good SNR and wide color range. The color space might change from Rec 709, to Rec 2020 (on Sony's recommendations).

While when you talk about delivering HDR, it implies reproducing more precisely brightnesses and contrasts, to reach high-fidelity. On the first hand, a screen might be able to reach a certain amount of brightness, while keeping a high contrast ratio. On the second hand, the OETF transformation curve, which takes consideration of characteristics of human eye, changes. For SDR TV standards, you may use 2.4 gamma. In their conference, Ericcson talked about a curve to implement in the HEVC encoding process, which takes care of the eye response to higher brights, the PQ curve. On the Sony side, they propose HGL and ST2084.



Extract from Ericsson conference about HDR

Conclusion

I have been perfectly welcomed by all members of IABM and exhibitors, I am very pleased to have been involved, during a few days, in this large and rich industry. I met wise people, learned so much about technologies, and opened some doors for my professional project. I had also the occasion to attend the Rising Star Program, which was helpful on understanding business.

I want to thank IABM for giving University of Valenciennes the chance to represent French education, and giving students the opportunity and resources to attend IBC. Thanks to Martin Salter and Andy Jones, to have demonstrated so much care before and during our visit, and to have supported all of us during the convention.