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**From:** Richard Saunders  
**Sent:** Wednesday, November 07, 2001 3:07 PM  
**To:** Linda Averett; Geoff Harris; Mike Beckerman  
**Subject:** FW: Summary: SRS/MS Meeting 11-6-01

FYI: summary of our SRS meeting yesterday...

-----Original Message-----

**From:** Richard Saunders  
**Sent:** Wednesday, November 07, 2001 3:02 PM  
**To:** 'chuck@copyright.com'; 'Jennifer Drescher (E-mail)'; 'Mike Canevaro (E-mail)'; 'Alan Kraemer (E-mail)'  
**Cc:** Adam Berns; Michael Patten; Mike Wall; Richard Saunders  
**Subject:** Summary: SRS/MS Meeting 11-6-01

Chuck, Jennifer, Mike, and Alan:

Thanks so much again for making the trip on Tuesday. I thought it was a productive meeting that set good direction and action items in a number of areas. Please let me know if you have any additions to my notes below.

As usual, we appreciate you treating all our discussions at this point highly confidentially.

Sincerely,  
Richard and the WM team

## **SRS/MS Relationship**

We discussed the issue of exclusivity of SRS-type DSP features (encoding and decoding) in or around Media Player 9. Although we do view SRS as a close partner we are not able to provide exclusivity of any kind for these features. We are working with SRS first but there may be other companies that we work with over time and all the interfaces that we are discussing and that SRS will potentially build upon for v9 will be public and available to all 3rd parties.

## **SRS Technology Update**

Brief update from SRS on TruSurround and CircleSurround:

- Trusurround XT was announced Tuesday. It will be going in to Cyberlink DVD software.
- TruSurround XT adds Focus dialog enhancement and TruBass bass enhancement for 5.1 sources being played back on 2 speaker systems.
- CircleSurround II will be announced at CES.
- It will add Focus and TruBase features in addition to support for mono sources. Targeted at encoding applications, home audio, and gaming

## **Demos**

We were treated to demos of TruSurround XT and CircleSurround II which included

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several pieces of WM content and DVD playback. Bit rates ranged from 90 kbps to 160 kbps on the WMA side.

Mike Wall is going to try and follow up with some additional demo listening and evaluation.

## **WM Player Plug-in Model Discussion**

WM team has decided to implement a public API to enable DSP plug-ins. This will enable SRS to develop CS and TS plug-ins for v9. Jim Alkove (Architect) presented the overview.

- The plug-in model will not allow you to renegotiate media "types" down – only up (IE. 2 channel to 5.1, not 5.1 to 2 channel)
- SRS will be able to negotiate 5.1 in to 2 because the renderer will already be set up to render to 2.
- Only one plug-in can be loaded or active at a time for audio.
- Each plug-in will have a prop page, and SRS could also optionally develop a UI plug-in (separate interface) to have control in the main player UI.
- The plug-in model does not handle persistence of settings or communication to the UI plug-in, prop page, etc. This needs to be handled by SRS.
- Plug-ins will work when the Player is embedded in a web page
- WM team is very worried about DVD perf. SRS's TruSurround filter being used by Cyberlink showed 8% CPU usage on a 350mhz pII. SRS will get more perf stats to aid in making the final decision on whether this will be supported.
- We discussed how the quality of DVD sw decoders varies greatly and that many cheaper solutions only do two channel. SRS could modify their plugin to source from 2 channel and still work from 5.1 source (for trusurround decoder)
- Requirements that SRS has for the plug-in model:
  - Ability to plug-in for DVD playback
  - Allow media changes (5.1 in 2 out). SRS could use the two main channels if necessary
  - Enable branding and graphic within player when the plug-in is enabled
  - SRS needs to renegotiation of up stream data type
- WM team will consider all these requirements.

## **Encoding Tool Strategy**

We continued the discussion about SRS delivering a tool, encoder add-on, hardware + software solution, or all three.

Per previous discussions, if the Encoder source plug-in model is used in a solution MS would need to license SRS these undocumented interface. In addition SRS needs to realize that these interfaces may not be fully tested and will change over time from rev to rev.

From MS standpoint we would like to be able to evangelize the SRS tool as a great real-time capture and broadcast tool that does surround sound and has great WMA multichannel support—including stereo 24 bit/96KHz WMA MC support.

There was a set of questions that arose that SRS needs to consider in the strategy for

the encoding tool:

- Is it a standalone SRS branded app or a plug-in to the WM encoder?
- Is it positioned as audio tool, surround tool, or is it a superset of what the WM Encoder tool does (ie. Video and audio)?
- Is it a hw + sw solution or are there multiple SKUs.
- How is WMA Multi Channel support positioned? Could be similar to TS/CS and Dolby Digital today.
- Should investigate support for multi-stream output (ie. Cs and wma 5.1 + video)

### ***Encoder transform plug-ins***

On a related subject, we talked about WM Encoder 9's ability to take DMO or Dshow filters and insert them into the encoding process to do audio and video transform processing.

SRS has several technologies (dialog enhancement, etc) that could benefit Encoder customers. These could be distributed with the SRS tool or as a plug-in pack for the Encoder or both.

### **WOW Effects 20+ bit support modifications**

Shafiq Rahman (developer) presented the changes required to the current WOW library for the v9 Player.

- In essence, since the SRS library is already floating point based, the change required is to handle WaveFormatExtensible for 20 and 24 bit. SRS feels this should be a fairly straight forward change to how data input is handled to the library.
- WFE has extra fields (valid bits per sample, flags for which speakers are valid) that need to be honored.
- WaveFormatExtensible is documented on <http://msdn.microsoft.com>. Click [here](#) for a direct link to WFE doc.
- Samples can be 24 or 30 bit. A field says how many bits are valid (20 for hddc)
- The SRS lib potentially needs to handle format changes. It may already do this today. SRS to investigate.
- The library should also handle higher sampling rates up to and including 96KHz.

### **Action Items and Next Steps**

- SRS to provide Mike Wall with software and demos once Mike gets his demo requirements set – Mike to get details to Alan
- SRS to send TruSurround DShow filter to MS so we can test out perf hit to evaluate enabling plug-in when playing DVDs - Alan
- SRS to review Plug-in model and provide feedback – Alan
- WRT 20+ bit support, MS to get a plan for 1) all changes need to wow lib, 2) timeframe – Rich
- SRS will immediately look at waveformatextensible to understand the impact of the code change
- Player Plug-in product strategy. Per discussions SRS is going to think about the

strategy (ie, what features to deliver, packaging)

- Encoding tool strategy - SRS to think about strategy and positioning for encoding tool product
- A next strategic step is to have marketing and bus dev follow up. This should occur after SRS has had time to do additional thinking about the strategic open issues. Rich to follow up with the right people in DMD and get back to Chuck
- MS to get legal docs in place so we can get SRS v9 code and SDK docs - Rich