Ultrasound Formats

Manufacturer	Format	Notes
Agilent*	DSR	(Digital Storage and Retrieval), a TIFF based format with added private tags
ATL*	DEFF	(Data Exchange File Format), a TIFF based format with added private tags
HP*	DSR	
Philips*	DSR	

Ultrasound formats		
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Alpinion	VR3D ".bin" files	I only have a few sample of these. The data, in ".bin" files, inside "VR3D" sub-dir and appear to be compressed. Used on the **E-CUBE** models. **Note:** At this time TomoVision is unable to read these files.
GE*	KretzFile ".vol" files, or ".v00" to ".vZZ"	This format support 3D volumes. Images can be in Spherical, Cylindrical or Cartesian system. The data can also be compressed using Wavelet compression. Used on some **Voluson** models. **Note:** TomoVision only support the uncompressed version of this format.
	DICOM	**"KRETZ_US"** private tag: The Kretzfile data is stored "as is" in these private tags. Used on some **Voluson** models. **Note:** TomoVision only support the uncompressed version of this format.
		"GEMS_Ultrasound_MovieGroup" private tag: The 3D/4D data is stored in these private tags. Used on some **Logiq** and **Vivid** models.
		"GEMS_Ultrasound_VolumeGroup" private tag: The 3D/4D data is stored in these private tags. Used on some **Vivid** models. Note: I only saw Cartesian examples of this. If you have a spherical dataset, please let me know!

Hitachi*	DICOM	This format support 3D/4D volumes, in an hybrid Cartesian/cylindrical system, using "US Multiframe Image" SOP Class to store Cartesian 2D images arrange in a 3D fan. The 3D information is stored in "**ALOKA...**" private tags. Used on some **Alpha** models. Note: I only saw cylindrical datasets from Hitachi/Aloka. If you have anything else, please let me know!
Medison*	Kartesian ".v00" to ".vFF" files	A very simple 3D format. The dataset can be Cartesian system or not. Used on some **Combison** models. Note: I only saw Cartesian examples of this. If you have a non-Cartesian dataset, please let me know!
	MVL ".mvl" files	(Medison 3D Volume), This format support 3D volumes. Images can be in Spherical, Cylindrical or Cartesian system.
Philips*	DICOM	"**Philips3D**" private tag: The 3D data is stored in these private tags. Used in **QLAB** exports. **Note:** TomoVision only support the uncompressed version of this format.
		"**Philip US Imaging DD**" private tag: - Using the "US Multiframe Image" SOP Class, the 3D data can be either stored in Cartesain format in the pixel data tag, or in the private tags (leaving room in the pixel data tags for rendered images of the volumes). - Using the "US Image" SOP Class, the 3D data is stored in spherical system directly in the private tags. Used on some **iU, iE** and **affinity** models. **Note:** I am still working on the spherical version, more news soon...
		"**Philip US Imaging 60**" private tag: The 3D data can be either stored in Cartesain format in the pixel data tag using the "US Multiframe Image" SOP Class, or stored (possibly compressed) directly in the private tags using the "US Image" SOP Class. **Note:** TomoVision only support the uncompressed version of this format.
Samsung*	MVL ".mvl" files	Samsung use 2 format with the same ".mvl" file extension. One is the Medison MVL format.
	MVL vers:221 ".mvl" files	The other ".mvl" file format, version 221, has nothing in commun with the previous MVL format exept for the file extension. It support 3D/4D datasets in spherical or Cartesian systems. Used in **Accuvix V** and other models.

	DICOM	The 3D data is stored (in Cartesian system only) using the "Enhanced US Volume" SOP Class. Used in **MySono U6** and other models?
Siemens	SPF	This format support 3D volumes (in Cartesian system?). Note: I only saw one sample of this format, and it was in Cartesian. If you have data in this format, please let me know!
Toshiba*	DICOM	**"PMTF INFORMATION DATA"** private tag: The 3D data is stored, uncompressed, in these private tags. Used on some **Aplio** and **Xario** models.
		"TOSHIBA MDW NON_IMAGE" private tag: The 3D data seem to be stored in compressed format in these private tags. Used on some **Xario** models. **Note:** At this time TomoVision is unable to read these files.
Zonare*	DICOM	The 3D data is stored using the "Raw Data Storage" SOP Class.
3D Ultrasound formats		

* Historical notes:
- in 1996, Medison acquired Kretztechnik AG.
- in 1998, ATL is acquired by Philips.
- in 1999, all of the businesses not related to computers, storage, and imaging were spun off from HP to form Agilent
- in 2000, Agilent Healthcare is acquired by Philips.
- In 2001, GE Medical Systems acquired a major shareholding in Kretztechnik AG from Medison, and Kretztechnik AG became a wholly owned subsidiary of GE Medical Systems.
- In 2011, Medison became affiliated with Samsung to form Samsung Medison.
- In 2011, Aloka is acquired by Hitachi.
- In 2013, Zonare is acquired by Mindray.
- In 2016, Toshiba Medical Systems is acquired by Canon.