DATA

.ddf vs .aris

Point of comparison	.ddf	.aris
versions	multiple	single
File header size (bytes)	512/1204	1024
Frame header size (bytes)	256/1024	1024
Hardware configurations	some	all

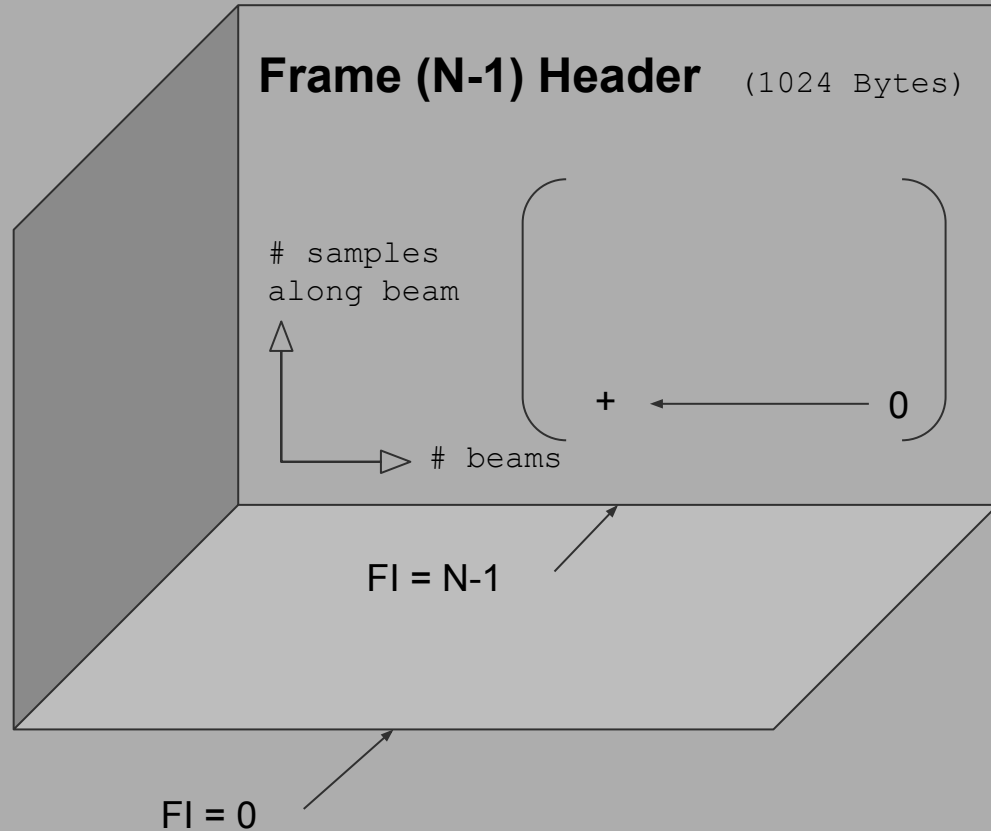UNIVERSITY OF OULU Luke

File Contents
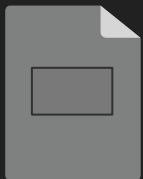
.aris
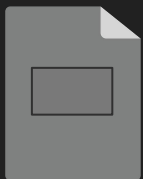
.ddf

- 1 or more frames.
- Each frame has signal strength.
- Frame: 2D matrix.
- One entry: unsigned 8-bit value.
- ⟵ Number of beams.[depends on ping mode; 48,64,96,128]
- ↑ Samples along the beam
- Frame index, zero based.
- File header @ position 0, then comes frames.
- Each frame has header.

File Header

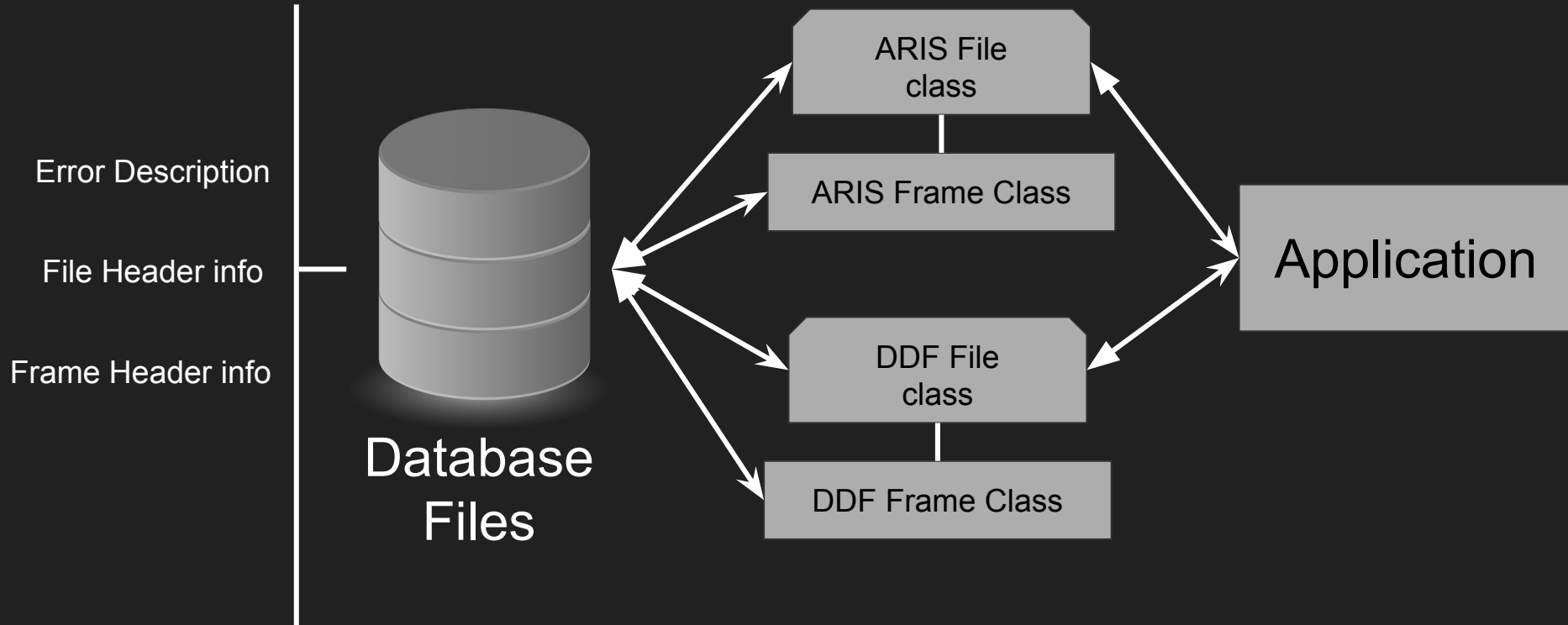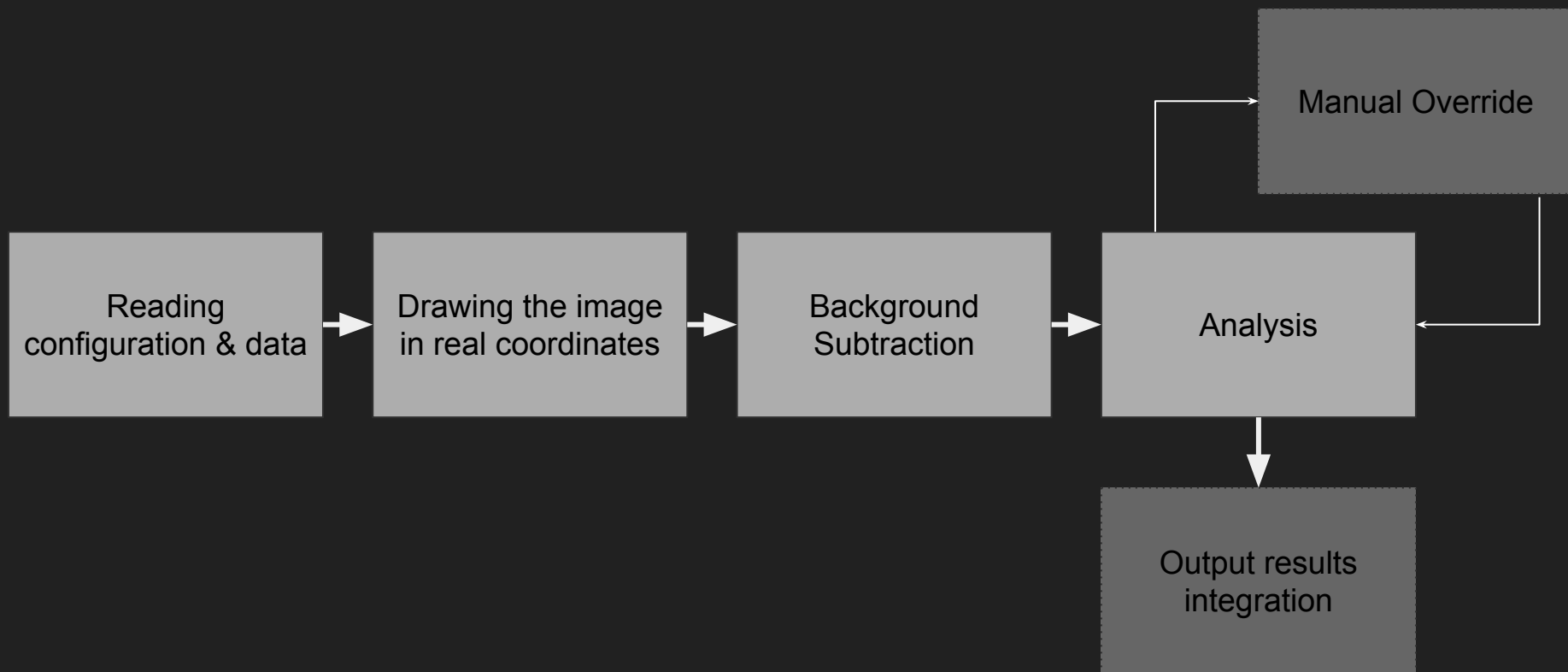(1024 Bytes)

- beamCount
(derived from
pingMode)
- sampleCount

Frame (N-1) Header (1024 Bytes)

\# samples
along beam

\# beams

+   0

FI = N-1

FI = 0

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File Header

1- Version
2- FrameCount*
3- FrameRate
4- HighResolution
5- NumRawBeams
6- SampleRate
7- SamplesPerChannel
8- ReceiverGain
9- WindowStart
10- Reverse
11- SN
12- strDate
13- strHeaderID
14- UserID1
15- UserID2
16- UserID3
17- UserID4
18- StartFrame
19- EndFrame
20- TimeLapse
21- RecordInterval

22- RadioSeconds
23- FrameInterval
24- Flags
25- AuxFlags
26- Sspd
27- Flags3D
_____
28- SoftwareVersion
29- WaterTemp
30- Salinity
31- PulseLength
32- TxMode
33- VersionFPGA
34- VersionPSuC
35- ThumbnailFI
36- FileSize
37- OptionalHeaderSize
38- OptionalTailSize
39- VersionMinor
40- LargeLens
41- padding

Frame Header

1- FrameIndex
2- FrameTime
3- Version
4- Status
5- sonar Time Stamp
6- TS_Day
7- TS_Hour
8- TS_Minute
9- TS_Second
10- TS_Hsecond
11- Transmit Mode
12- WindowStart
13- Window Length
14- Threshold
15- Intensity
16- Receiver Gain
17- DegC1
18- DegC2
19- Humidity
20- Focus
21- Battery
22- UserVal1
23- UserVal2
24- UserVal3
25- UserVal4
26- UserVal5
27- UserVal6
28- UserVal7
29- UserVal8
30- Velocity

31- Depth
32- Altitude
33- Pitch
34- PitchRate
35- Roll
36- RollRate
37- Heading
38- HeadingRate
39- Compass Heading
40- Compass Pitch
41- Compass Roll
42- Latitude
43- Longitude
44- Sonar Position
45- ConfigFlags
46- BeamTilt
47- TargetRange
48- Target Bearing
49- Target Present
50- FirmwareVersion
51- Flags
52- SourceFrame
53- WaterTemp
54- TimerPeriod
55- SonarX
56- SonarY
57- SonarZ
58- SonarPan
59- SonarTilt
60- SonarRoll

61- PanPNNL
62- TiltPNNL
63- RollPNNL
64- VehicleTime
65- TimeGGK
66- DateGGK
67- QualityGGK
68- NumSatsGGK
69- DOPGGK
70- EHTGGK
71- HeaveTSS
72- YearGPS
73- MonthGPS
74- DayGPS
75- HourGPS
76- MinuteGPS
77- SecondGPS
78- HSecondGPS
79- SonarPanOffset
80- SonarRollOffset
81- SonarXOffset
82- SonarYOffset
83- SonarZOffset
84- Tmatrix
85- SampleRate
86- AccellX
87- AccellY
88- ...

Software layout (File Read/Write API)

Error Description

File Header info

Frame Header info

Database Files

ARIS File class

ARIS Frame Class

DDF File class

DDF Frame Class

Application

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Reading configuration & data → Drawing the image in real coordinates → Background Subtraction → Analysis → Manual Override / Output results integration

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Subtract background

FRAME HEADER

File1.aris   x

Flip image horizontally

Flip image vertically

Show markers on detected fish

Automatically analyze

SHOW MORE

FILE HEADER

Play as video

Previous Frame

Next Frame

SHOW MORE
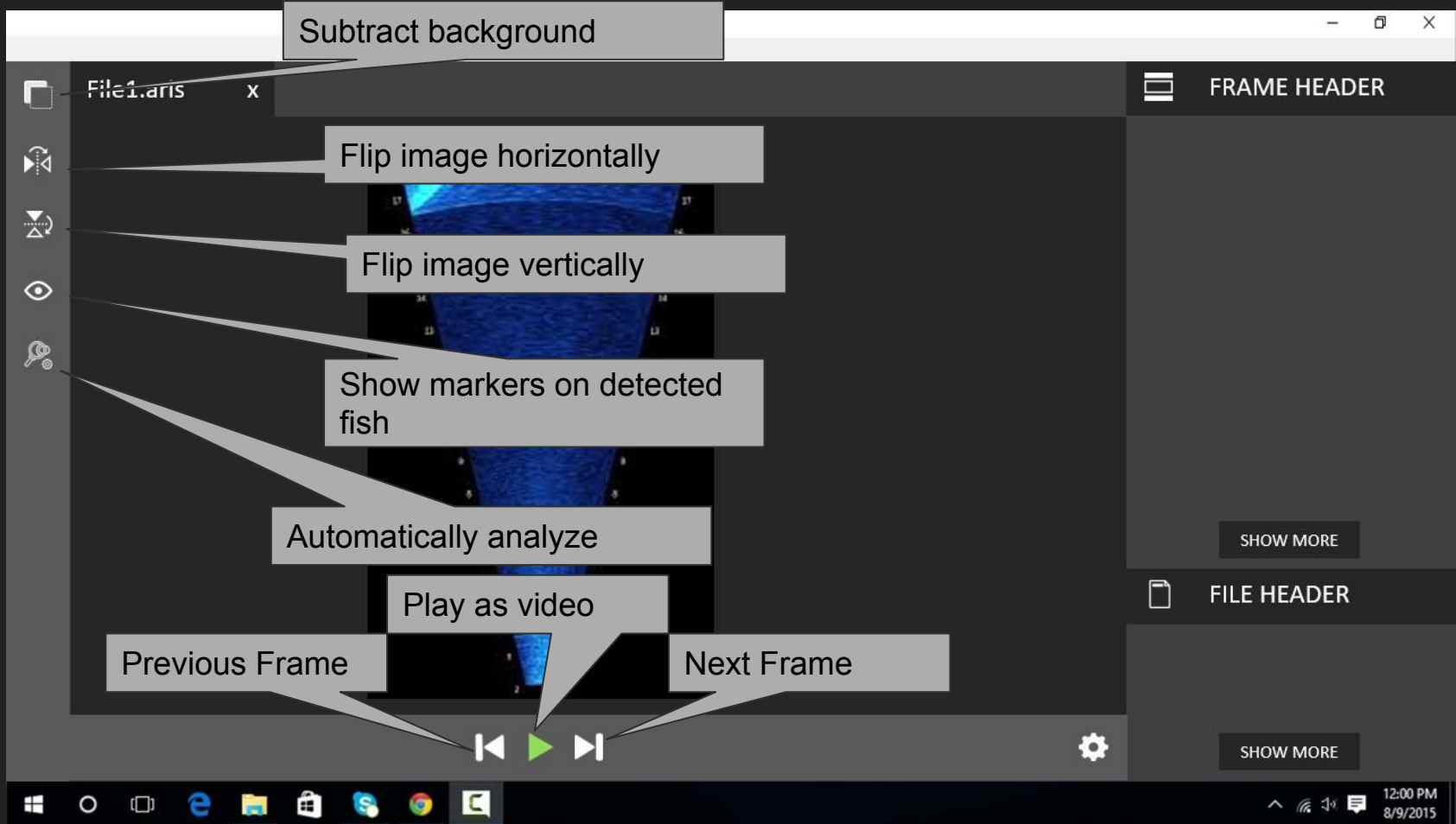
Important Note

Slides show the Final Goal of the UI,

In the current stage, the UI will not look the same, but will provide the same functionality.

If any design changes needed, please contact me.

Peek at the data

5186 frames
Beams   =   96
Samples   =   1208

Sonar Status

Serial Number	1376
Frequency	1.1 MHz
Beams	96
Samples	1208
Resolution	20.3 mm
Receiver Gain	14 dB
Range End	27.32 m
Focus	19.88 m
Range Start	1.32 m
Depth	-0.9 m
Sonar Heading	54°
Sonar Pitch	-1.10°
Sonar Roll	1.40°
Rotator Pan	0.00°
Rotator Tilt	-77.00°
Rotator Roll	NaN°
Sound Velocity	1484 m/s
Fresh Water	21 °C
Power Supply	27 °C
CPU	37 °C
Humidity	42 %
Input Power	46.9 V

Show Headers

	A	B	C
1	FrameIndex	FrameTime	WaterTemp
2	1	1498089603328949	20.5
3	2	1498089603571215	20.5
4	3	1498089603788372	20.5
5	4	1498089604017302	20.5
6	5	1498089604246759	20.5
7	6	1498089604476089	20.5
8	7	1498089604705674	20.5
9	8	1498089604934970	20.5
10	9	1498089605164418	20.5
11	10	1498089605394621	20.5
12	11	1498089605623296	20.5
13	12	1498089605852758	20.5
14	13	1498089606082329	20.5
15	14	1498089606311622	20.5
16	15	1498089606541084	20.5
17	16	1498089606770994	20.5
18	17	1498089607000629	20.5
19	18	1498089607229326	20.5
20	19	1498089607458898	20.5
21	20	1498089607699641	20.5
22	21	1498089607917709	20.5
23	22	1498089608147261	20.5
24	23	1498089608376630	20.5
25	24	1498089608606678	20.5
26	25	1498089608835640	20.5
27	26	1498089609064944	20.5