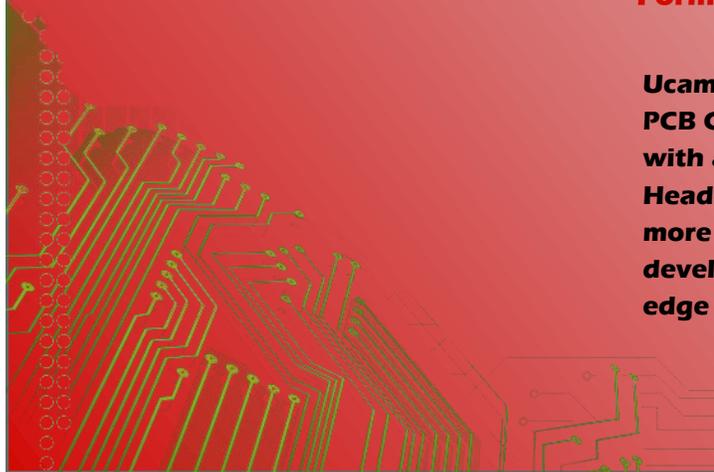




**Integr8tor**

**Ucamco**   
**Former Barco ETS**

**Ucamco (former Barco ETS) is a market leader in PCB CAM software and laser photoplotting systems with a global network of sales and support centers. Headquartered in Ghent, Belgium, Ucamco has more than 25 years of continuous experience in developing, supplying and supporting leading-edge photoplotters and front-end tooling solutions**



**Day to day business during quoting:**

- ◆ Many Quoting requests arrive every day.
- ◆ Customers want a fast and adequate response.
- ◆ Only 10-20% will be an order. Which means the 80-90% will not be an order!!  
These jobs have to be handled anyway which need lots of labor, costs a lot of time and money and disturbs the work in Sales and Engineering.....  
So we need a software to help us.....

## **Integr8tor**

Integr8tor is a software tool to collect quoting parameters AUTOMATICALLY.

Integr8tor will also deliver a ready to use CAM job.

◆ **Features :**

- Collects the required parameters for quoting automatically.
- Creates a ready to use job for CAM (Original Job).
- Saves precious time for the engineers in both Sales and CAM.
- Engineers can concentrate on their core Jobs.

◆ **Functions:**

- Integrated e-mail server accepts incoming mails.
- Stackup recognition.
- Registration, Polarity and Outline detection.
- Layer renaming to the company's naming convention.
- Design analysis.
- Detection of conflicts in data.
- Deliverables:
  - QED Report in PDF and XML format.
  - A ready to use original job for use in CAM.  
(For Ucam, Genesis/InCam or Gerber-X based CAM systems)

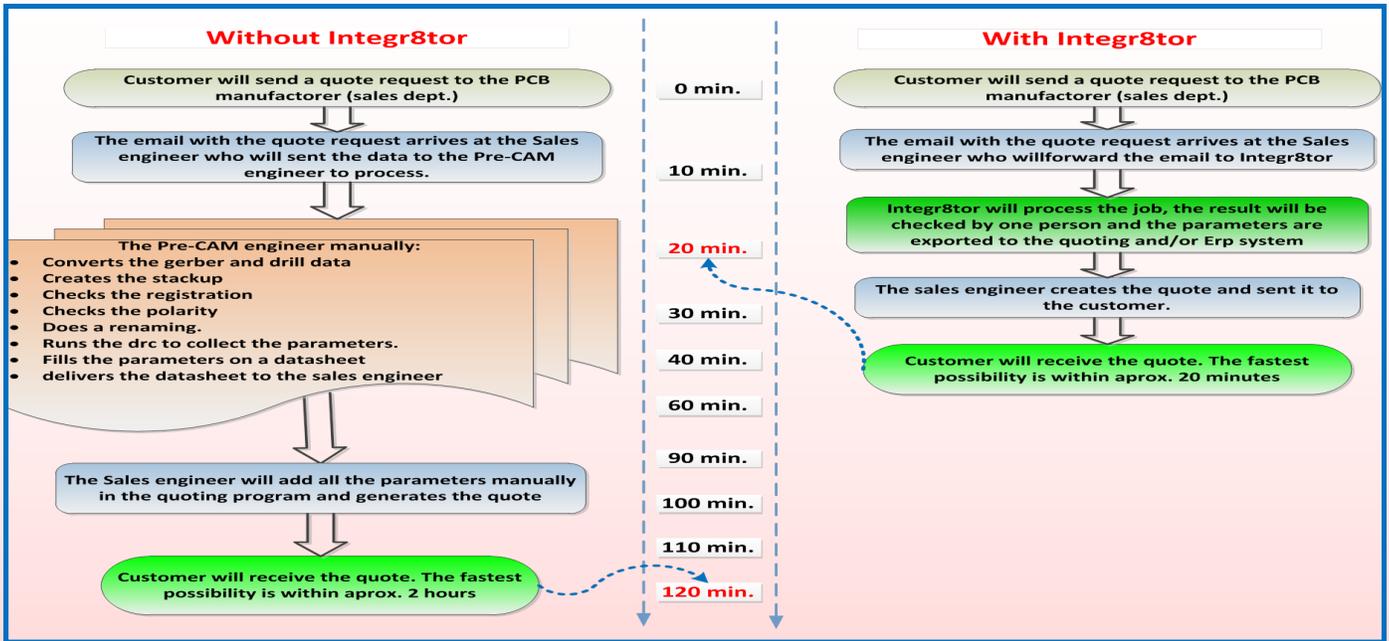
◆ **Architecture:**

- Client – server architecture.
  - Automated knowledge-based background workflow applications.
  - Fast, off-line operation on server away from CAM.
  - Client application based on Adobe AIR technology:
    - Greater flexibility (readily customisable)
    - Access from any networked workstation

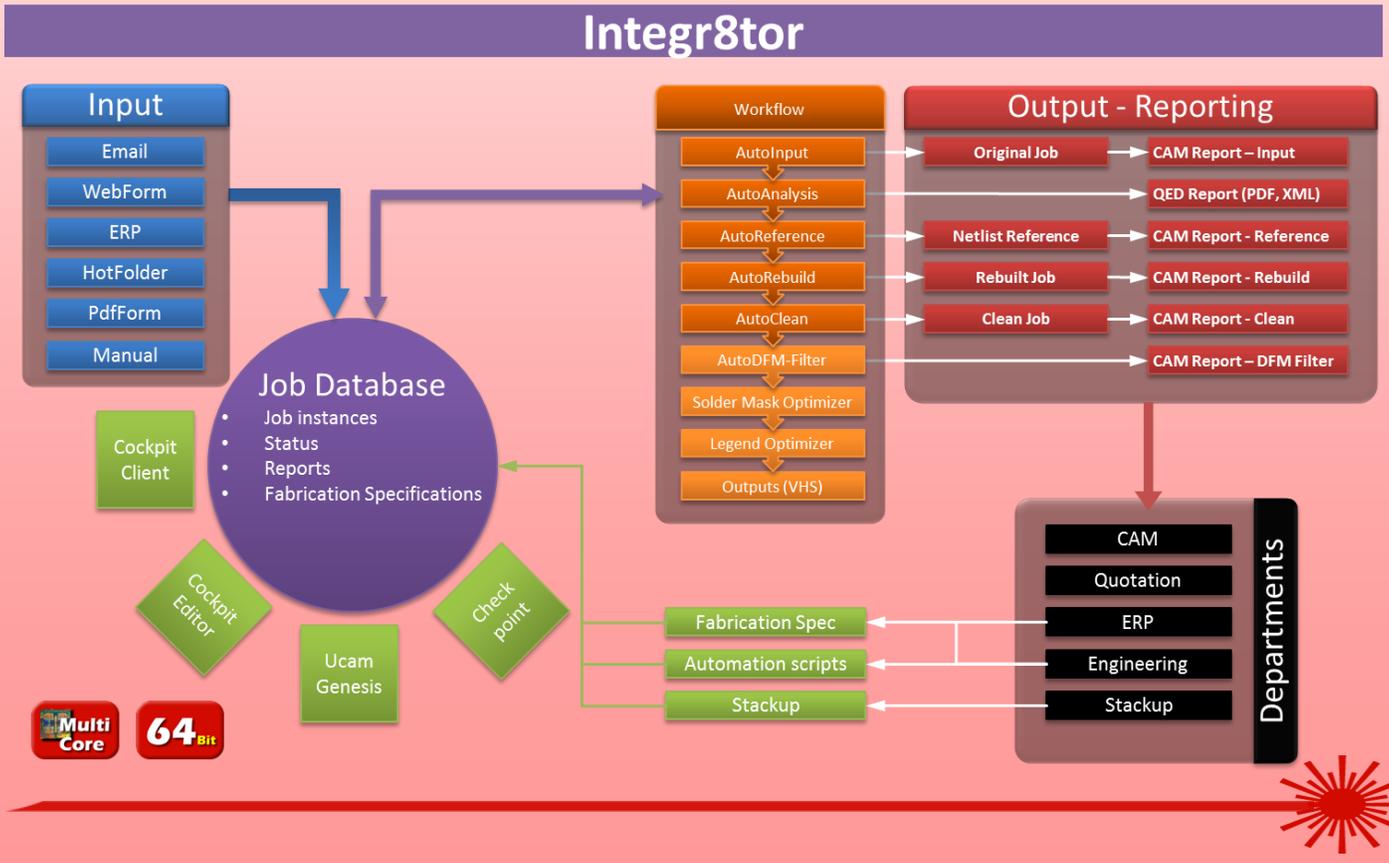


By using integr8tor a lot of time can be saved in collecting information required for quoting.

Users can deliver faster and more accurate quotes to customers.



**Integr8tor's workflow including the NEW AutoCam functionality**



Input formats	Output
<ul style="list-style-type: none"> <li>◆ All known archive formats like zip, rar 7zip ;</li> <li>◆ All CAM input formats like, gerber-X, gerber-d, ODB++, Ucam Job, Ucam dpf;</li> <li>◆ All Drill / Rout formats like Excellon 1 and 2, S&amp;M 1000 and 3000, hitachi, Posalux;</li> <li>◆ Netlist formats like, IPC356A, IPC356B, Mentor NF, ODB netlist, Ucam Netlist, etc.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Documentation files;</li> <li>◆ Job archive;</li> <li>◆ Original job (DPF/ODB++/RS-274X)</li> <li>◆ Layer images (PDF/PNG)</li> <li>◆ QED Report (PDF/XML)</li> <li>◆ Rebuilt job (DPF/ODB++)</li> <li>◆ Clean job (DPF/ODB++)</li> <li>◆ CAM Report (PDF)</li> <li>◆ UFD Files etc.</li> </ul>



Ucamco Integr8tor Cockpit v6.2.2-120323-16.2.23

LOGGED IN AS: ron  
DN HOST: localhost:8080 [autoflow]

EXIT PREFERENCES HELP

View: Ron Default Layout Ron 2

JOB QUEUE [323] JOB EDITOR: [330 - Ip3239C\_184 412-01.zip.i8.zip]

## Integr8tor SheetOptimizer

**You can predefine the values of the board and panel. what's more, you can fill in the limit of the values, then the software will calculate and show you the op-**

**SHEET OPTIMIZER**

The Shipping Unit will be:  Single PCB  Shipping Panel

Predefined **Calculated**

Size min:  x   
 Size max:  x   
 Clearances:  x   
 Border min:  x   
 Border max:  x   
 Allow Rotation:

Working Panel

Predefined **Calculated**

Size min:  x   
 Size max:  x   
 Clearances:  x   
 Border min:  x   
 Border max:  x   
 Allow Mixed Rotation:

Sheet

Act	Vendor	Material	x	y
<input checked="" type="checkbox"/>	Nan-Ya	FR4	980.0	1020.0
<input checked="" type="checkbox"/>	Nan-Ya	FR4	1020.	1200.0
<input checked="" type="checkbox"/>	Nan-Ya	FR4	1200.	1500.0
<input checked="" type="checkbox"/>	Nan-Ya	FR4	1400.	1600.0
<input checked="" type="checkbox"/>	KB	FR4	2000.	2000.0
<input checked="" type="checkbox"/>	SL	Polyamide	1030.	1230.0

Allow Mixed Rotation:

**Results**

Accepted	Optimized	Vendor	Material	Width	Height	Usage SH	Usage WP	Usage SU
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Nan-Ya	FR4	1200	1500	75.19	97.78	86.77
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Nan-Ya	FR4	1020	1200	69.11	92.3	81.26
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Nan-Ya	FR4	1020	1200	69.11	93.57	81.26

**Result Preview**

All Sheet

Sheet

**Result Details**

Sheet

Size:   
 Usage:   
 PCB Count:   
 Clearance:   
 Mixed Rotation:   
 Top:   
 Border Left:  Right:   
 Bottom:   
 Shipping Unit

Size:   
 Usage:   
 PCB Count:   
 Clearance:   
 Rotation:   
 Top:   
 Border Left:  Right:   
 Bottom:

18 Checkpoint v9.2.3-120327 - [D:\integr8tor\Out\8\_Customer\_29225-2019\_1.zip.i8\_work\25-2019\_1.zip.i8] - [Licensed to Ron Geelen]

**Checks**

**Trackwidth**

**Trackwidth**

First Previous 4 / 1246 Next Last

Layer: tl

Width: 0.1016 mm  
Length: 0.831 mm

## Integr8tor Checkpoint

**TOP LAYER**

Legend

- solder mask to
- 1 ts
- 2 tl
- 3 inner1
- 4 inner2
- 5 inner3
- 6 inner4
- 7 inner5
- 8 inner6
- 9 inner7
- 10 inner8
- solder mask bl
- legend bs
- bo
- drill
- drill\_1



## QED Report

The QED report contains many sections with specific information. The report can be created in many different languages.

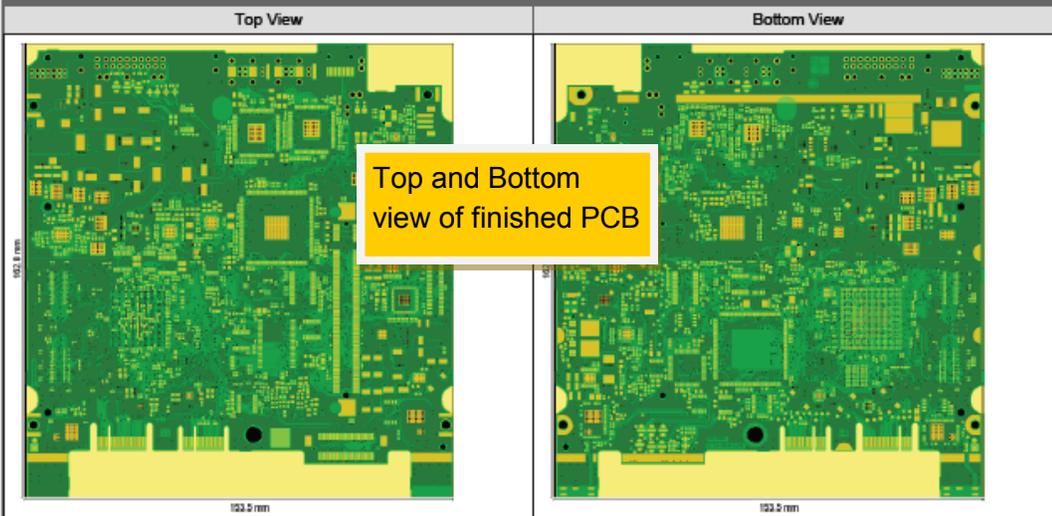
- Single PCB view
- General Summary
- Graphical Stackup
- Archive Contents
- Copper Layers
- Drill Tools
- Finishes
- Soldermask
- Bareboard
- Rout Tools
- Viaplug
- Scoring
- PCB Dimensions
- Panel utilization
- Sheet optimizer
- Process Parameters

## QED Report

## Integr8tor

Name	B173401012MB.i8.zip.i8.zip	Id.	321 - null
Report Generated on	Apr 2, 2012 2:00:07 PM	Customer	Brochure
Board Id	My board	Article Id	3219902
Quote Id	0001234	Input Comment	uploads
Demo Job	Yes	Year	2012

### Single PCB View



### Summary - General

PCB Size	153.500 mm x 162.800 mm	Copper Layers	8
PCB Thickness	1.600 mm	Solder Mask	Both
Customer Panel Size		Solder Mask Color	Green
SMD Pads Top	3051	Legend	None
SMD Pads Bottom	2824	Legend Color	White
SMD Density Top	1389 SMD/dm <sup>2</sup>	Paste	Both
SMD Density Bottom	1185 SMD/dm <sup>2</sup>	Peeloff Mask	None
Number of Nets	1904	Carbon Mask	None
Drill Hole Density			Double Sided
Holes in Pad			10.700

### Summary - Copper Layers

Layer Type	Min. Track	Min. Ring	Min. Cir. to Copper	Min. Cir. to Plated Hole	Min. Cir. to NPTH	Min. Cir. to Outline
	mm	mm	mm	mm	mm	mm
Outer	1 0.090 2	0.100 3	0.090 4	0.249 5	0.175 6	0.000 7
Inner	8 0.075 9	0.100 10	0.090 11	0.249 12	0.449 13	0.487 14



### Copper Layers

File	Pos.	Min. Track	Min. Ring	Min. Clr. to Copper	Min. Clr. Pad to Pad	Min. Clr. Pad to Track	Min. Self-spacing	Min. Clr. to PTH	Min. Clr. to NPTH	Min. Clr. to Outline	Copper Area	
		mm	mm	mm	mm	mm	mm	mm	mm	mm	dm <sup>2</sup>	%
co	1	0.090	0.100	0.099	0.100	0.099	0.001	0.249	0.175	0.000	1.5399	70
I1	2	0.300	0.100	0.099	0.120	0.099	0.000	0.249	0.450	0.487	1.1	
I2	3	0.075	0.100	0.099	0.120	0.099	0.001	0.249	0.450	0.487	1.1	
I3	4	0.200	0.100	0.099	0.120	0.099	0.000	0.249	0.449	0.487	1.1	
I4	5	0.140	0.100	0.099	0.120	0.099	0.001	0.249	0.450	0.487	1.1	
I5	6	0.075	0.100	0.099	0.120	0.099	0.000	0.249	0.450	0.487	1.5791	72
I6	7	0.500	0.100	0.099	0.120	0.099	0.000	0.249	0.450	0.487	1.9908	91
so	8	0.090	0.100	0.099	0.099	0.099	0.002	0.249	0.175	0.000	1.5422	70

Detailed copper layer information

Conditional formatting

### Finishes

Side	Bare Copper Area	Exposed Copper Area	Exposed Gold Area	Exposed Silver Area
	dm <sup>2</sup>	dm <sup>2</sup>	dm <sup>2</sup>	dm <sup>2</sup>
Top (including barrels)	1.7527	0.3572		
Bottom (including barrels)	1.7550	0.3949		
Total (including barrels)	3.5077	0.7521		

Detailed Finishes information

### Drill Tools

File	Tool Nr.	Span	Type	End Dia.	Holes (in PCB)	Double Hits (in File)	Min. Ring on Outer	Min. Ring on Inner	Min. Pad Size
				mm			mm	mm	mm
drill	17	1-8	NPTH	0.700	2	0			
drill	12	1-8	NPTH	0.800	2	0			
drill	16	1-8	NPTH	0.900	4	0			
drill	15	1-8	NPTH	1.100	2	0			
drill	13	1-8	NPTH	1.500	1	0			
drill	11	1-8	NPTH	1.700	2	0			
drill	14	1-8	NPTH	2.000	1	0			
drill	9	1-8	NPTH	2.100	2	0			
drill	8	1-8	NPTH	2.550	2	0			
drill	10	1-8	NPTH	3.200	4	0			
drill	7	1-8	NPTH	6.200	1	0			
drl	6	1-8	PTH	0.150	2283	0	0.148	0.148	0.446
drl	5	1-8	PTH	0.200	1288	0	0.150	0.150	0.500
drl	3	1-8	PTH	0.400	666	0	0.100	0.100	0.600
drl	2	1-8	PTH	1.000	46	0	> 0.200	> 0.200	> 1.400
drl	1	1-8	PTH	1.500	13	0	> 0.200	> 0.200	> 1.900
drl	4	1-8	PTH	1.600	12	0	> 0.200	> 0.200	> 2.000

Detailed Drill Tool information

### Sequences

Span	Type	Tools	Min. End Dia.	Max. End Dia.	Holes	Min. Ring on Outer	Min. Ring on Inner	Min. Clr. Hole to Copper	Min. Clr. Hole to Hole	Min. Clr. Hole to Hole (Inner Seq.)	Min. Clr. Hole to Outline
			mm	mm		mm	mm	mm	mm	mm	mm
1-8	PTH	6	0.150	1.600	4308	0.100	0.100	0.249	0.300		0.740
All	Plated	6	0.150	1.600	4308	0.100	0.100	0.249	0.300		0.740
1-8	NPTH	11	0.700	6.200	23			0.175	> 1.600	0.600	0.850
All	All	17	0.150	6.200	4331	0.100	0.100	0.175	0.300	0.600	0.740

Detailed Hole information



# **Ucamco**



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