

Integr8tor v2017.12

Release notes
Ucamco NV - Belgium





Integr8tor

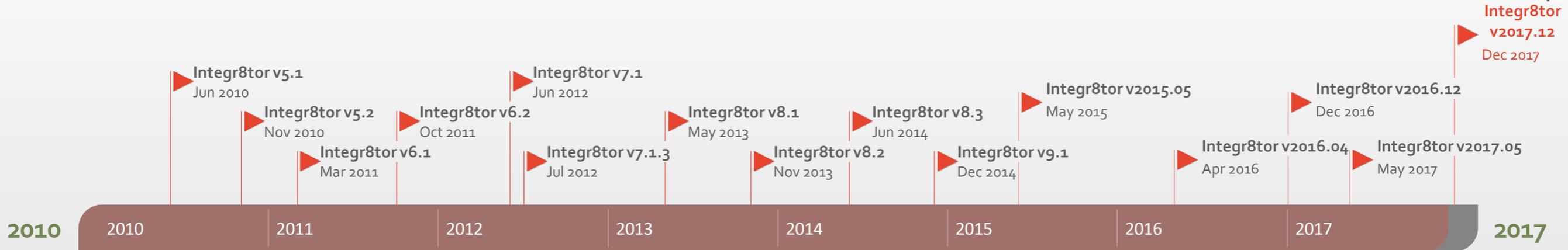
V2017.12

Supporting your business to the full



Integr8tor v2017.12

Serving our customer base with regular updates



Version	Release date	Highlights	
7.1	Jun-12	Localized interface.	Line width on planes.
7.1.3	Jul-12	Bug fix release for 'recovered job'.	
8.1	May-13	Support for ODB++ v7.	Compatible with Windows server 2012 and windows 8.
8.2	Nov-13	Detection and flagging of duplicate archives.	Edge connector recognition.
8.3	Jun-14	New standard parameters.	Determination of laser/mechanical drilling.
9.1	Dec-14	Support for Gerber X2 datasets.	Optimized and new QED values.
2015.05	Jun-15	New standard parameters.	Determination of laser/mechanical drilling.
2016.04	Apr-16	SMD/BGA pads differentiates copper- and solder mask defined	DFM Checks (former Capabilities) revised
2016.12	Dec-16	Introducing Integr8tor Job Perspectives	Drill hole tolerances
2017.05	May-17	Support for PCB Surface finish	Same-sized jobs detection
2017.12	Dec-17	Checkpoint review extensions for various QED results	Analysis of via holes with different solder mask openings top/bottom

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Feature overview

NEW ✨



- **AutoInput – Support for additional file formats**
 - Provide timely service to your customers by automatically reading in their
 - ❖ IPC-D-356 B Netlist reference files
 - ❖ Supermax – ECAD style drill files
- **Design Analysis – Report different top/bottom solder mask openings**
 - Identify different-size top/bottom solder mask openings on via holes and cater for the extra manufacturing steps in your quotation...
- **Checkpoint – Extended feature review list**
 - Show QC or CAM the areas of particular interest on the board...
 - ❖ Copper width (vs. line width)
 - ❖ Drilled BGAs and SMDs
 - ❖ Stacked Vias
 - ❖ Vias with different Top/Bottom solder mask openings
 - ❖ Split Track/Track, Pad/Pad, Pad/Track clearances



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Feature overview

NEW 



- **Cockpit - System Admin functions**
 - Log off Integr8tor users who forgot to close their session or who lost connection to the system after a network disruption...
 - Unlock jobs that ended up in a stale situation following a network connection problem...
- **System - Windows Server 2016 support**
 - Let integr8tor follow your IT infrastructure upgrades and run it on Microsoft's most recent server OS...
- **AutoInput - DXF input for design analysis and board manufacture***
 - Microwave or RF board designs often come as DXF, rather than Gerber...
 - Capture customer DXF manufacturing files and analyse as usual.

*DXF input for design analysis is a licensed feature

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Feature overview

ENHANCED ✨



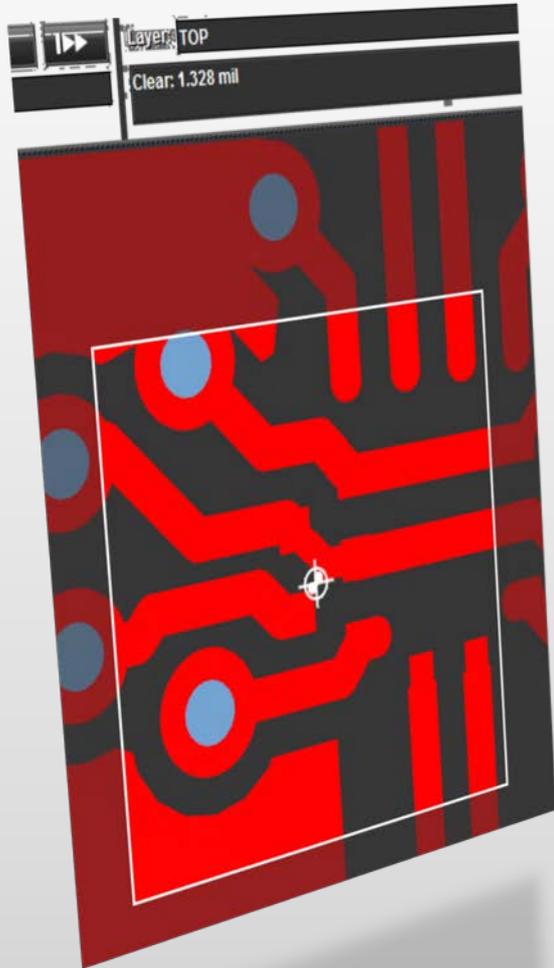
- Major performance increase
 - See your processing times decimated on heavily painted data...



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Feature overview

ENHANCED ✨



- Same net clearance analysis
 - The job-based netlist now used for Same net clearance analysis produces far superior QED analysis results and truthful Checkpoint review locations...
- Checkpoint for 32-bit operating systems
 - Get the most out of your IT investments by prolonging the life of your legacy 32-bit client platforms...
- Checkpoint location scanner
 - Set the zoom factor of your preference and preserve it while scanning from one location to the next...
- LibreOffice upgrade
 - Take advantage of the latest improvements to better render .doc, .xlsx,... and other documentation files in your customer archives...

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Feature overview

ENHANCED 

FILENAME	REFERENCE	FUNCTION
40-A026016_SRT.gbx	zzyxxx41	mgl
40-A026016_L01.gbx	zzyxxx01	fluid
40-A026016_L02.gbx	zzyxxx02	fluid
40-A026016_L03.gbx	zzyxxx03	fluid
40-A026016_L04.gbx	zzyxxx04	mixed
40-A026016_L05.gbx	zzyxxx05	mixed
40-A026016_L06.gbx	zzyxxx06	fluid
40-A026016_L07.gbx	zzyxxx07	fluid
40-A026016_L08.gbx	zzyxxx32	fluid
40-A026016_SRB.gbx	zzyxxx51	mgl
40-A026016_DDN.exc	zzyxxx60n	drill
40-A026016_DDP.exc	zzyxxx60	drillmap

- **Stackup recognition enhancements**
 - The extended stackup recognition library gives you more jobs with a correct layer stackup right after input without manual intervention...
- **QED Sequence analysis**
 - The revised section on the QED report supplies extensive information on stacked and overlapping vias in adjacent drill spans
 - Checkpoint's new review capabilities put you right on the spot...

File	Pos.	Stacked Vias	Overlapped Vias	Min. Clr. Via Plug	Top Tool			Bottom Tool		
					Top Drill File	Tool Nr.	Dia.	Bottom Drill File	Tool Nr.	Dia.
					mm			mm		
zzyxxx02	2	No	4	0.022	zzyxxx96	3	0.254	zzyxxx80	1	0.152
zzyxxx03	3	No	2	0.305	zzyxxx97	3	0.254	zzyxxx81	1	0.152
zzyxxx10	10	No	1	0.305	zzyxxx91	1	0.152	zzyxxx97	3	0.254
zzyxxx11	11	Yes	0	0.000	zzyxxx90			zzyxxx96		



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Extension and Enhancement Details



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AutoInput – Support for IPC-D-356 B netlist files(*)

NEW



- Netlist files help capture potential layout changes, introduced unwantedly during data exchange between different systems
- They are essential in the process of safely transferring data between design and manufacturing
- IPC-D-356 B netlist is a widespread format to convey PCB board connections
- Integr8tor picks up IPC-D-356 B files automatically during AutoInput and uses them transparently to validate the correctness of the incoming PCB layout data

(*) this is a licensed option

INITIAL	RENAMED	FORMAT	FUNCTION	POSITION	POLARI
Board.ipc356_Mentor-Original.ipc	Board.ipc356_Me	ipc356b	netref	top	
4088543_EtchLayer01Top.gbx	4088543_EtchLay	ger274x	outer	1	positive
4088543_EtchLayer02.gbx	4088543_EtchLay	ger274x	inner	2	positive
4088543_EtchLayer03.gbx	4088543_EtchLay	ger274x	inner	3	positive
4088543_EtchLayer04Bot.gbx	4088543_EtchLay	ger274x	outer	4	positive
Board.ipc356_Mentor-Original.ipc	Board.ipc356_Me	ipc356b	netref	bottom	

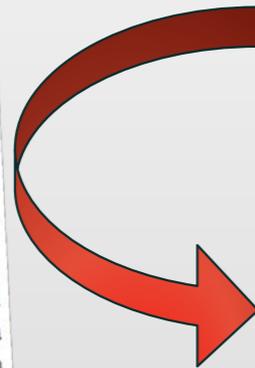
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AutoInput – Support for SuperMax – ECAD style drill files

NEW



```
drill:
jdp7588_0 Tue Jan 10 10:35 2017
ascii
mm
autodrch
plated:
num: 694 size: 9.8mill = 0.25mm
num: 48 size: 31.5mill = 0.8mm
num: 8 size: 35.4mill = 0.9mm
num: 38 size: 39.4mill = 1mm
num: 2 size: 63mill = 1.6mm
num: 1 size: 126mill = 3.2mm
non-plated:
num: 3 size: 126mill = 3.2mm
num: 4 size: 153.5mill = 3.9mm
%
X1472Y857T1
X1806Y1175
X1330Y1357
```



- SuperMax – ECAD is a legacy suite of design tools from Dansk Data Elektronik – EDA A/S (DDE-EDA)
- Drill files in a DDE-EDA PCB manufacturing set feature a very specific logic for assigning diameters to tool numbers
- AutoInput captures this advanced tool assignment logic and reads in DDE-EDA data sets fully automatically

- Higher throughput with fewer data sets requiring manual tool assignment
- No extra license required – free of charge for customers with a valid maintenance contract

LIST

INPUT REMARKS [8] ✕

TODOS [2]

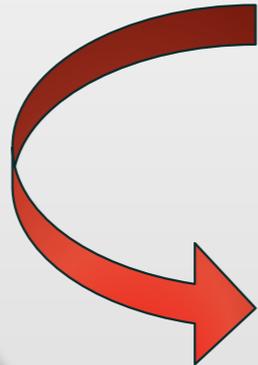
CRITICAL REMARKS [0]

Multiple Tool #1 references in sum3000 drill file 'jdp7588_0.drl' split in 2 parts

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Design analysis – Report different top/bottom solder mask openings

NEW



- Different-size top/bottom solder mask openings on via holes requires additional manufacturing steps or special solder resists and potentially impacts on the request for quotation
 - During final inspection, quality control (QC) may take a special interest in knowing where on the board this situation occurs
-
- QED design analysis flags the presence of different-sized top/bottom solder mask openings in an extra column of the solder mask analysis section

Solder Mask - Original

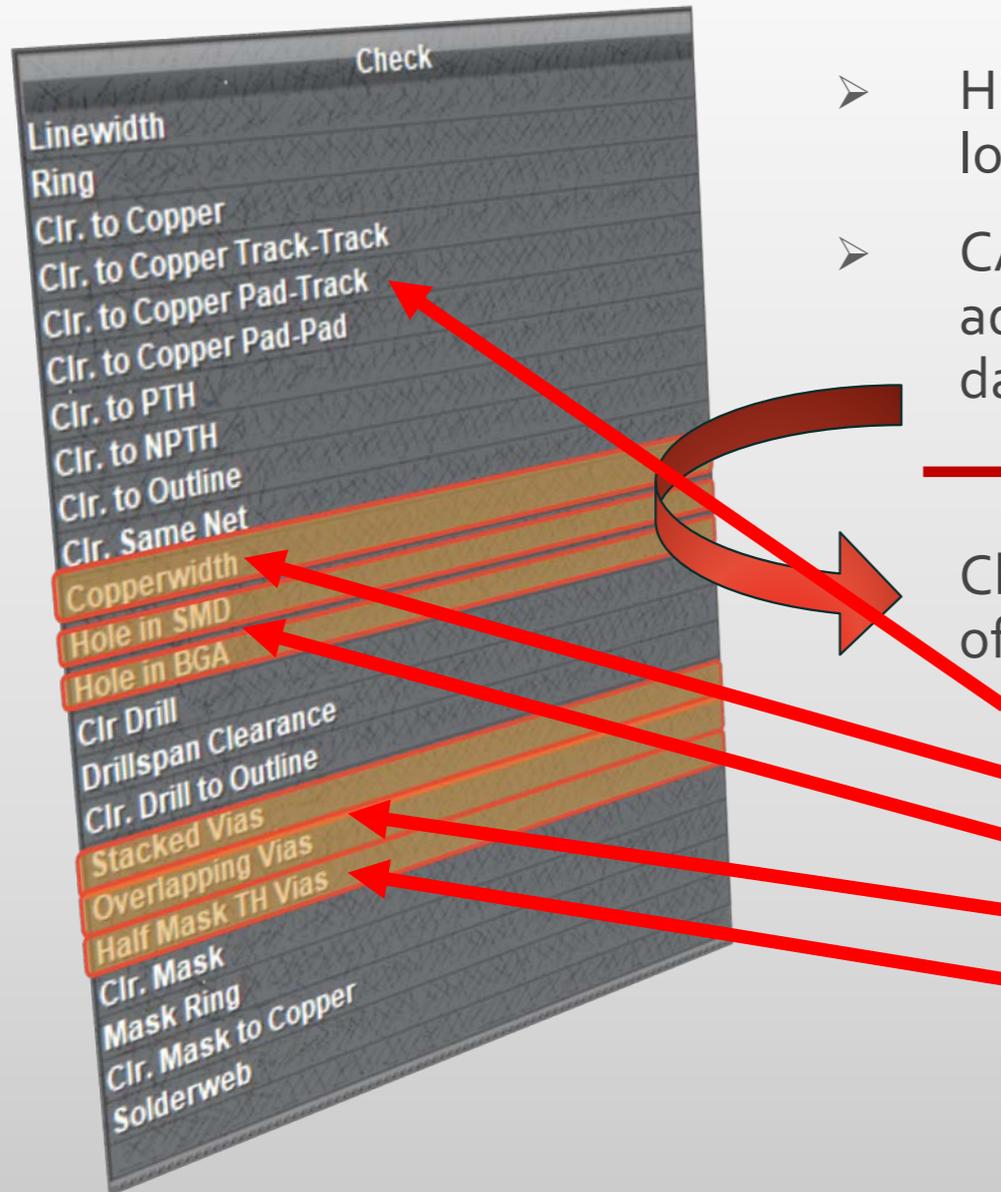
Side	Min. Ring on Cu Defined Pads	Min. Ring on SM Defined Pads	Min. Clr. Mask to Mask	Min. Web	Min. Clr. Mask to Copper	Fully Covered Via Holes	Partly Covered Via Holes	TH Via Holes Half Mask
	mm	mm	mm	mm	mm			
Top	0.002		0.250	0.025	0.000	Yes	No	No
Bottom	0.100		>0.250	0.000	0.000	Yes	Yes	No
All	0.002		0.250	0.000	0.000	Yes	Yes	Yes



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Checkpoint – Extended feature review list

NEW



- Higher board complexity comes with an increased need for locating and reviewing certain aspects of the design
- CAM and Quality Control often require the location info of advanced board characteristics, to focus on during single image data preparation or final inspection

Checkpoint's revised feature review list helps you locate a wealth of new design characteristics on the board with ease:

- ❖ Split Track/Track, Pad/Pad, Pad/Track clearances (*)
- ❖ Copper width (vs. line width)
- ❖ Drilled BGAs and SMDs
- ❖ Stacked Vias
- ❖ Through-hole vias with different Top/Bottom solder mask openings ("Half-Mask Through-Hole Vias")

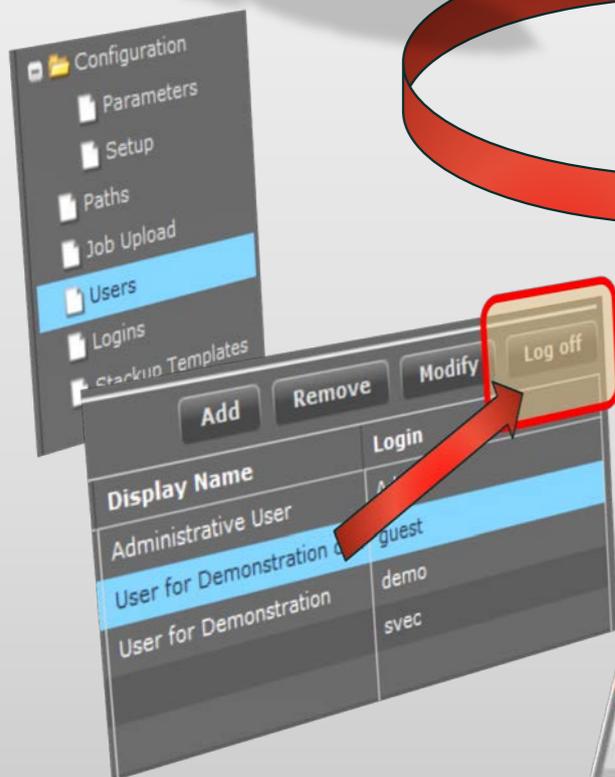


* = requires an edit of your existing Checkpoint configuration file. Contact our helpdesk if you are interested to see the copper clearance split...

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Cockpit – New System Admin functions

NEW



- Users easily forget to log off their Integr8tor Cockpit session when it is going to be inoperative for a longer period of time
 - Network or VPN instability can cause user connections to the server being cut, without the session being properly terminated
 - As a result, jobs in the JobQueue may end up locked
-
- 2 new cockpit functions have been added to elegantly remedy these situations:
 - ❖ **UNLOCK** – conveniently located on the Cockpit > JobQueue toolbar to unlock locked jobs – Admin rights required
 - ❖ **Log off** – in the Preferences > Configuration > Users pane to terminate stale user sessions – Admin rights required



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System - Windows Server 2016 support

NEW ✨

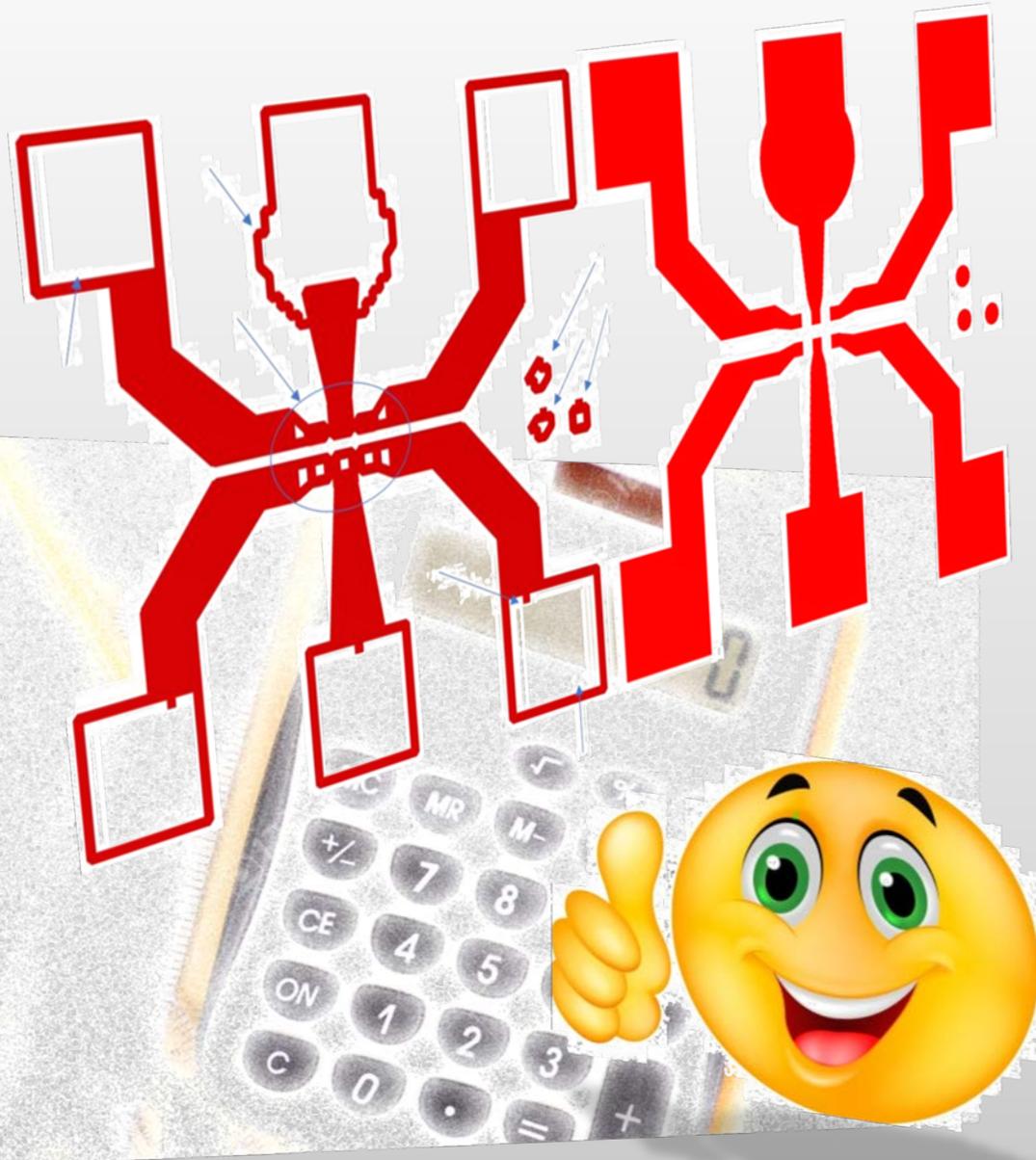


- Microsoft Windows Server 2016 has been added to the list of supported platforms for hosting the Integr8tor server software
- Free of charge - no migration or administrative fees for customers with a valid maintenance contract
- Check out the updated version of the Ucamco software installation requirements document on our website or our ftp download server

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AutoInput - DXF input for design analysis and board manufacture(*)

NEW



- Microwave and HF boards are often designed using “non-standard” design packages
- Manufacturing output from these packages tends to be DXF rather than Gerber
- Collecting QED data from this type of customer archives was not supported so far

- Customer archives with fabrication layout data in DXF can now be read in, analysed and quoted for, just like regular Gerber archives
- High-accuracy DPF files can be exported for further processing in CAM

(*) this is a licensed option

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Enhancements – Major performance increase

ENHANCED



- v2017.12 features a thoroughly redesigned design analysis workflow and raises performance to unprecedented levels
 - Heavily painted data, data with minute gaps in the painting and/or crosshatched layers in particular are showing dazzling reductions of the processing time
 - Performance gains of 300% and more are no exception!!
-
- Pack your Integr8tor server with **V12 power** and slash processing times on the most time-consuming of your jobs
 - Extract the same, field-proven, reliable QED data at stunning speeds and get your quotation out before anybody else can

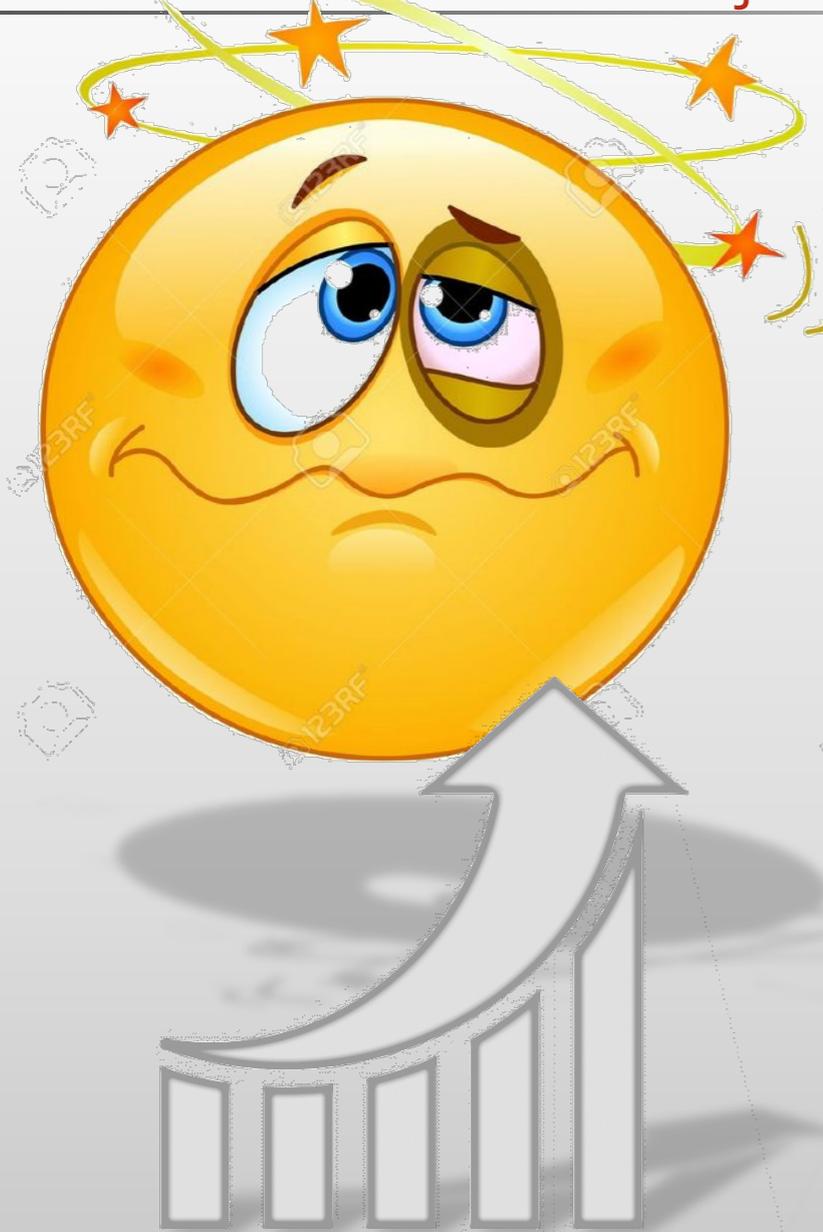
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Enhancements – Major performance increase

ENHANCED

- Some statistics from an extensive test suite with real-life customer data sets...

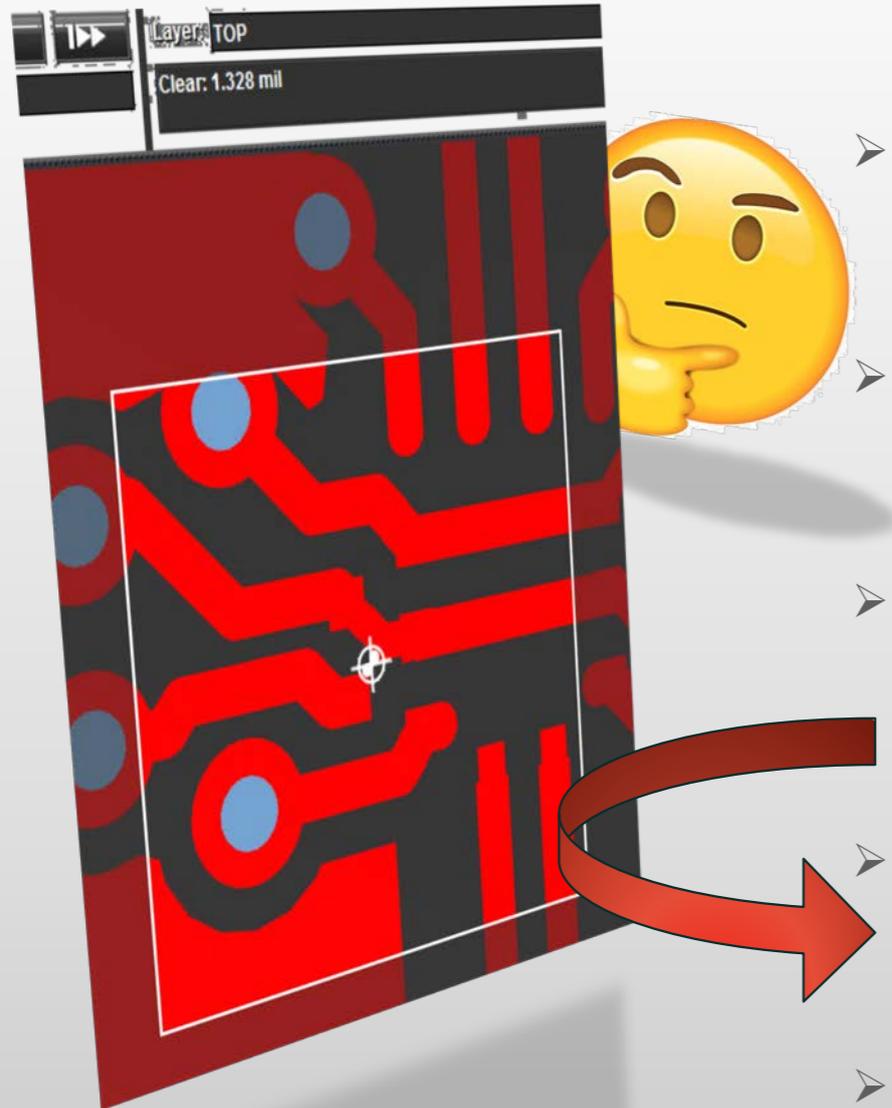
Archive name	Data type	Processing time before speedup	Processing time after speedup
RFQP251587	cross-hatched	8h09min	19min
RFQP244914	cross-hatched	3h13min	2h24min
HPI0284AgerberAscii_A04	cross-hatched	>16h	18min
quote_data	cross-hatched	5h53min	34min
era3930	painted	60min	27min
505-10295	painted	5h39min	3h41min



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Enhancements – Same net clearance

ENHANCED



- Earlier revisions of Integr8tor were considering layer-based netlist to establish whether or not 2 objects belong to the same net
- Copper objects connected via plated drill holes and a copper connection on a different layer were excluded from same net clearance reporting
- In specific configurations of data, this could lead to a sub-optimal locations review list in Checkpoint

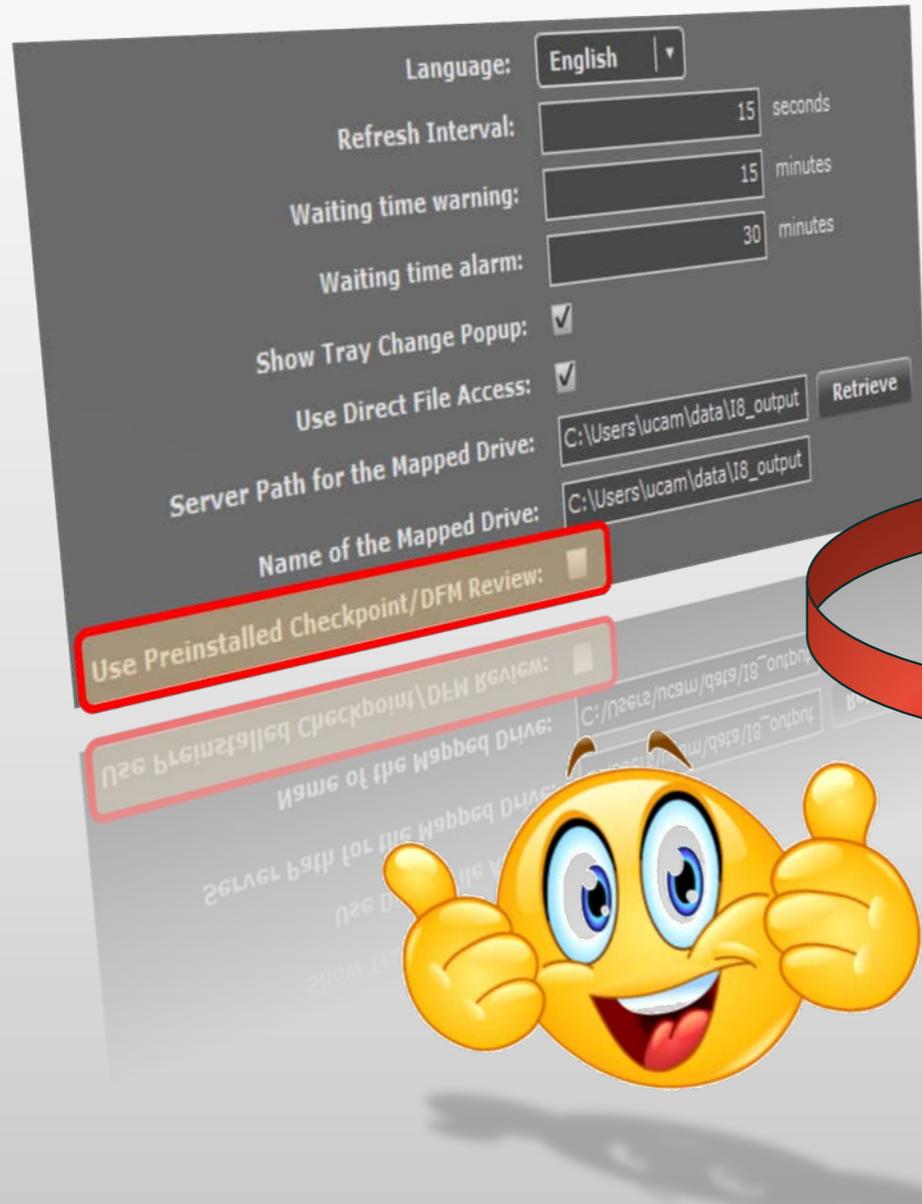
-
- Same net clearance analysis has been reviewed to use a job-based netlist for the highest possible accuracy in the QED results
 - No more “false calls” on same net clearance statistics



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Enhancements – Checkpoint support for 32-bit operating systems

ENHANCED

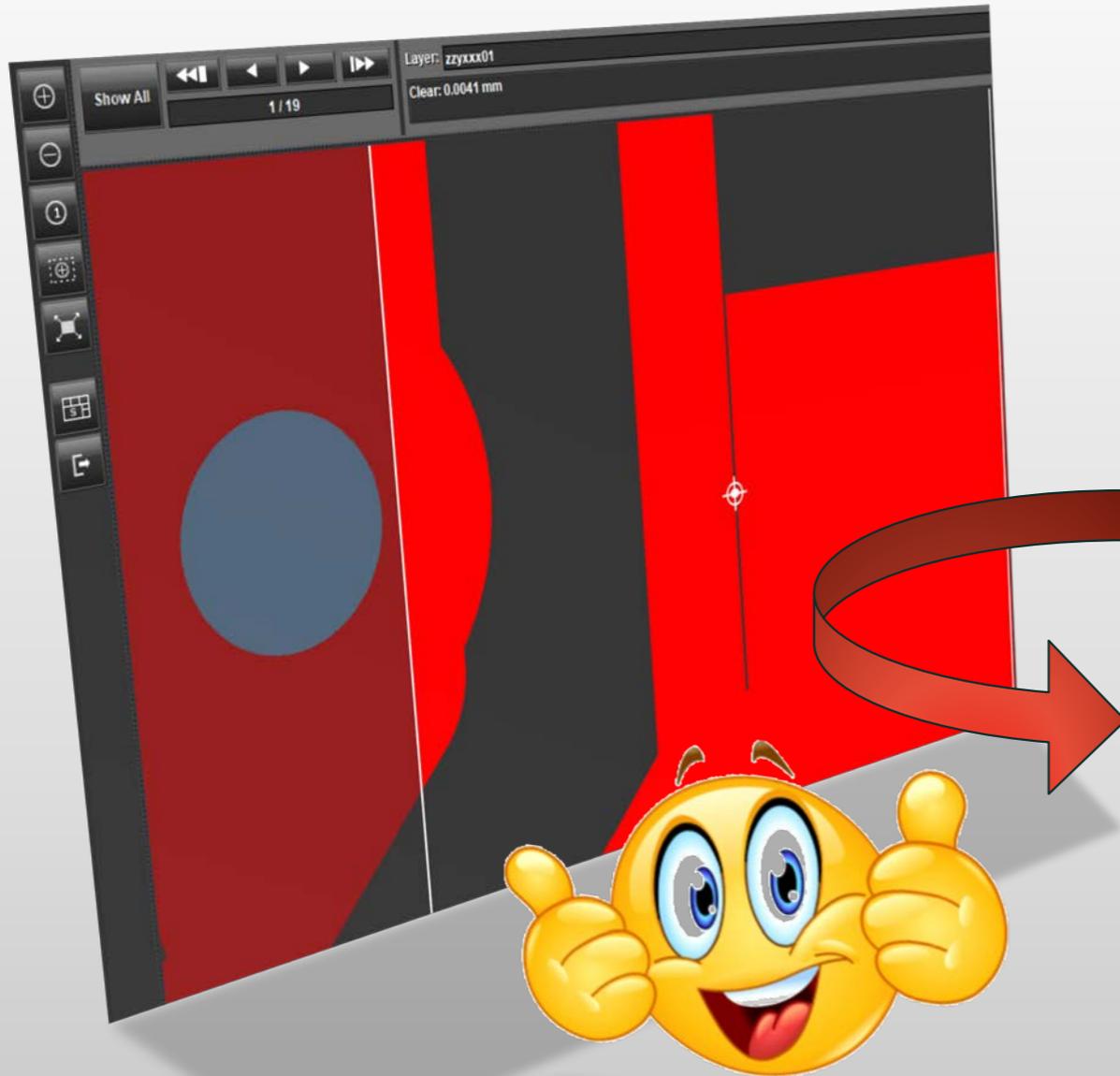


- Earlier software revisions tied the use of Checkpoint to a 64-bit environment
 - Many cockpit clients still run on 32-bit hardware/operating system
-
- Leave the option “Use Preinstalled Checkpoint/DFM Review” unchecked and let the system decide whether the 32 or 64-bit Checkpoint is required
 - Protect your earlier IT investments and prolong the lifetime of your legacy 32-bit client platforms...

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Enhancements – Checkpoint location scanner

ENHANCED ✨



- Previously Checkpoint was imposing the zoom factor to be used for scanning through the design locations
 - On smaller designs this was compromising an optimum user experience
-
- Set the zoom of your preference on the first location to visit and maintain it throughout the rest of the scan
 - Enjoy an uncomplicated and pleasant tour around the areas of interest on the board

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Enhancements – LibreOffice upgrade

ENHANCED ✨



➤ LibreOffice is a third-party package within Integr8tor used for consistent and uniform viewing of Office-like documents contained within a customer archive

➤ The newly embedded LibreOffice 5.4.3.2 offers wider support for various document types and better Microsoft Office file compatibility

➤ Open and view all board-related customer documentation from within Integr8tor and let no instruction or detail escape your attention

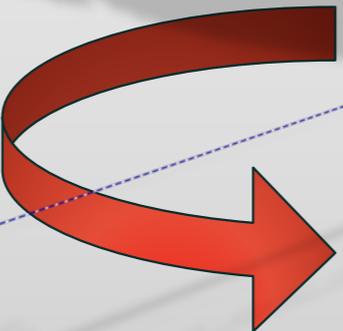
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Enhancements – Stackup recognition enhancements

ENHANCED ✨

1 Gerber File Extension Report For: 240-00291-01-A.GBR 10/16/2017 11:23:41 AM

Layer Extension	Layer Description
.GTL	Top Layer
.GP1	Layer 2 Plane - GND
.G1	Layer 3 Signal
.GP2	Layer 4 Plane - PWR
.GP3	Layer 5 Plane - GND
.G2	Layer 6 Signal
.GP4	Layer 7 Plane - GND
.GBL	Bottom Layer
.GTO	Top Overlay
.GTP	Top Paste
.GTS	Bottom Solder
.GBS	Bottom Paste
.GBP	Bottom Overlay
.GBO	Drill Drawing
.GD1	Drill Drawing
.GD2	Drill Drawing
.GD3	Drill Drawing
.GD4	Drill Guide
.GG1	Drill Guide
.GG2	Drill Guide
.GG3	Drill Guide
.GG4	Drill Guide

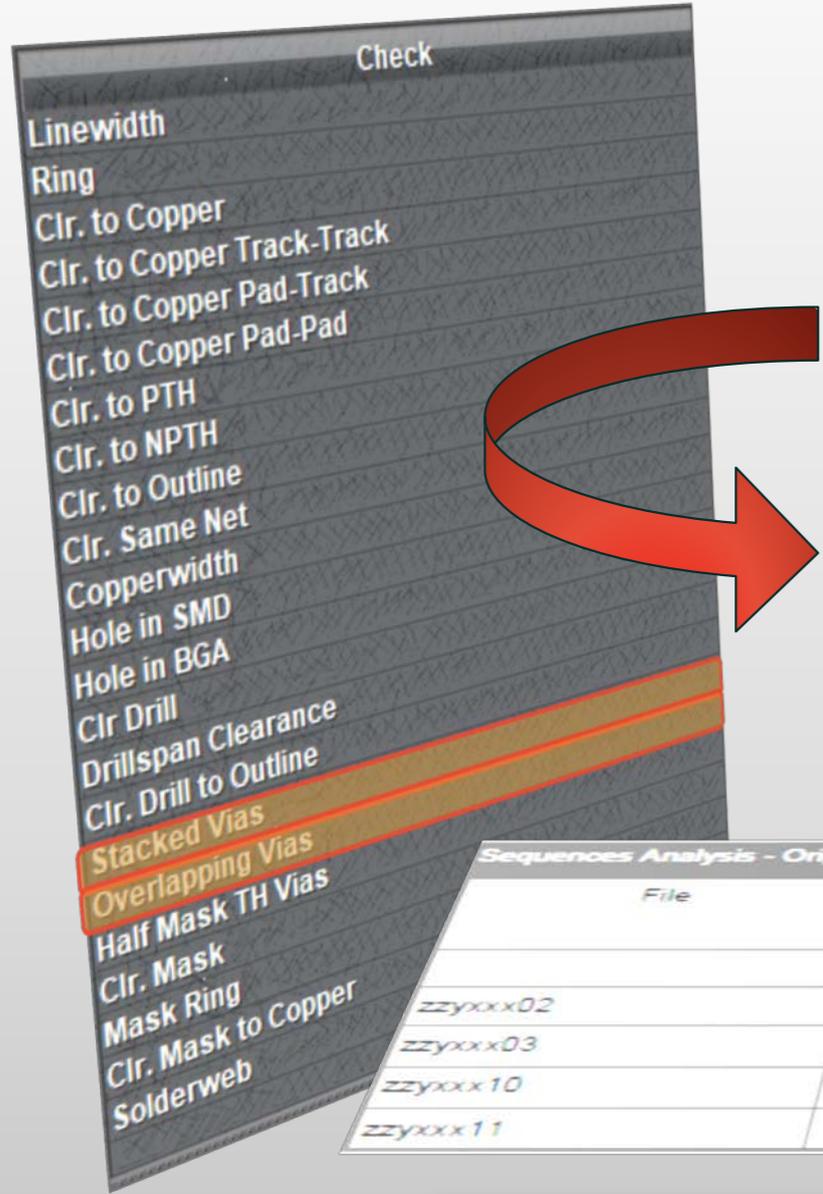


- A correct layer stackup is mandatory for an accurate QED report
- Fully automatic recognition of layers and their function within the PCB greatly contributes to timely analysis results and the shortest possible response time to your customer's RFQ
- Integr8tor's stackup recognition intelligence database has been further extended to capture even more layer stackup makes and models fully automatically
- See more of your customer archives go from start to finish in one uninterrupted, automatic flow

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Enhancements – QED Sequence analysis

ENHANCED 



- Sequence analysis section carries vital information on stacked or overlapping vias in different drill runs
 - Sometimes these drill hole overlaps are intended, sometimes they flag a flaw in the board design
-
- To correctly assess the situation, Sequence Analysis features full details of which copper layer, drill files, tool numbers and tool diameters are involved in the situation
 - Combine it with Checkpoint's new review capabilities to locate stacked and overlapping vias on the board

Sequences Analysis - Original

File	Pos.	Stacked Vias	Overlapped Vias	Min. Clr. Via Plug mm	Top Tool			Bottom	
					Top Drill File	Tool Nr.	Dia. mm	Bottom Drill File	Dia. mm
zzyxxx02	2	No	4	0.022	zzyxxx96	3	0.254	zzyxxx80	0.254
zzyxxx03	3	No	2	0.305	zzyxxx97	3	0.254	zzyxxx81	0.152
zzyxxx10	10	No	1	0.305	zzyxxx91	1	0.152	zzyxxx97	0.254
zzyxxx11	11	Yes	0	0.000	zzyxxx90			zzyxxx96	

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Code fixes



We have also taken great care in fixing the items below for you and hope this will contribute to an even better user experience...

- ❖ When starting QED Edit from the Job Editor, the application was suffering from an incomplete display of the list of customer parameters.
- ❖ When the incoming data was supplied as a customer panel and Sizes Editor was used to designate the base image, the results of a subsequent analysis was still as per the complete customer panel for everything relating to drills.
- ❖ In earlier revisions of the software, incoming archives without graphical data could still be taken into Dynamic Panel Optimizer (DPO) to enter a theoretical PCB size, with which the software would then calculate the list of possible customer and/or production panels. This functionality was broken at some stage and has been restored in this release.
- ❖ When you had different views/layouts and happened to close the QED report in one of them, it did no longer show in the Add View dropdown and so it was impossible to get it back.
- ❖ The ability to add an empty copper layer to a job in the layer structure editor has been restored.



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Code fixes - Continued



- ❖ Solder mask or legend layers that are aliased to a different function/subclass are now correctly displayed in Checkpoint again.
- ❖ The input remarks section could sometimes contain a reference to the variable @NAME, while in fact the actual layer name was intended. This problem has been corrected.
- ❖ Archive file names without an extension will no longer cause a null pointer exception.
- ❖ An Cockpit issue related to language settings not being properly propagated has been addressed.
- ❖ Laser drill sequences are correctly output into the PPD (PCB Production Data) XML output.
- ❖ In very specific cases, line width detection was reporting an incorrect value. This has been fixed.
- ❖ A case where Modify Job was causing a Java null pointer exception has been corrected.
- ❖ Certain archives combining both ODB and Gerber data could trigger an IllegalArgumentException, leaving the Cockpit file list without any entries. This is no longer the case.



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Code fixes - Continued



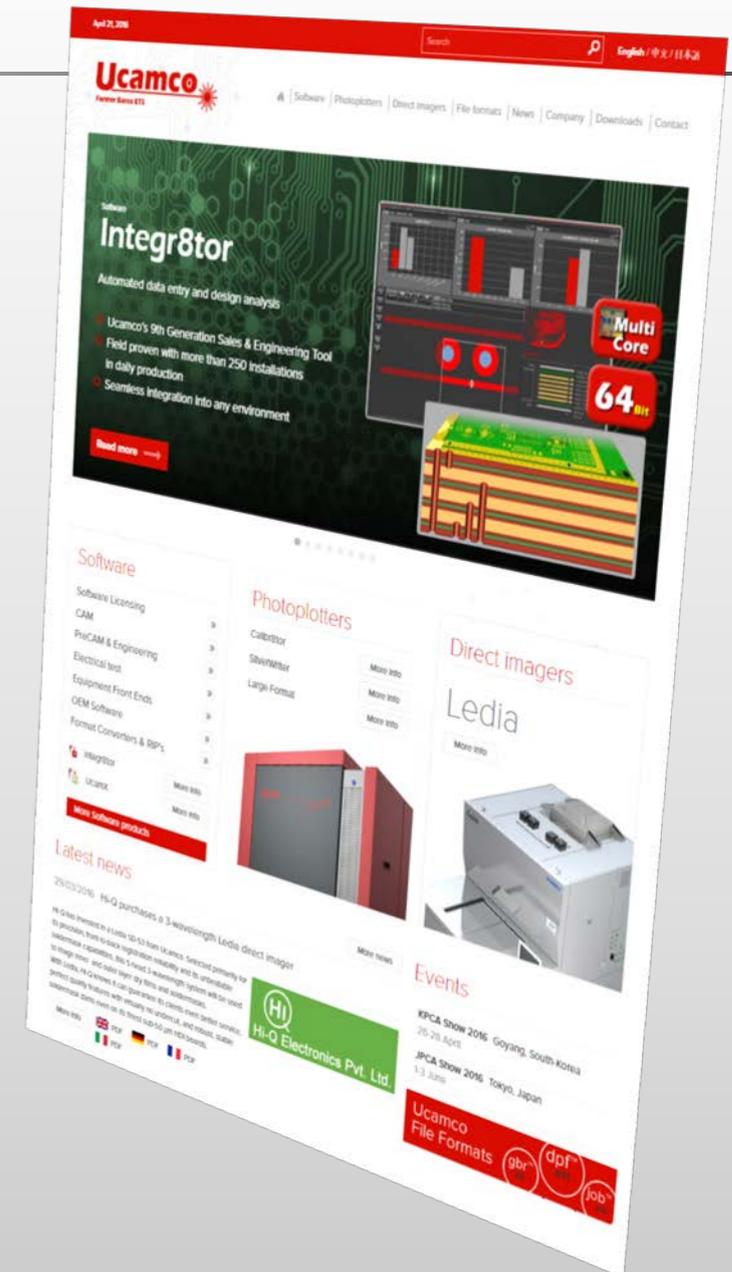
- ❖ Exact contourization has been ruggedized for better performance on specific data sets.
- ❖ The calculation of the total number of drill hits required to create the slots on a board (nibble count) has been revised and is now yielding more accurate results.
- ❖ Notes or comments potentially provided via the PDF input form are now correctly propagated to the system.
- ❖ The route from Integr8tor to Polar SpeedStack and back using the .stkx interface format has been restored.
- ❖ Edit QED is no longer displaying a white font on top of a white background in the comments section.
- ❖ Modifying values using the "Edit QED" function on the File List tab page in Cockpit is now correctly updating the associated fields again, causing the edits to be persistent.
- ❖ Rout layers input from an ODB++ data set now feature the correct layer alias information.
- ❖ The mechanism for sending a job from Integr8tor to Ucam via the "To Ucam" function on the File List tab page in Cockpit has been overhauled to provide a smoother user experience.
- ❖ And many more...



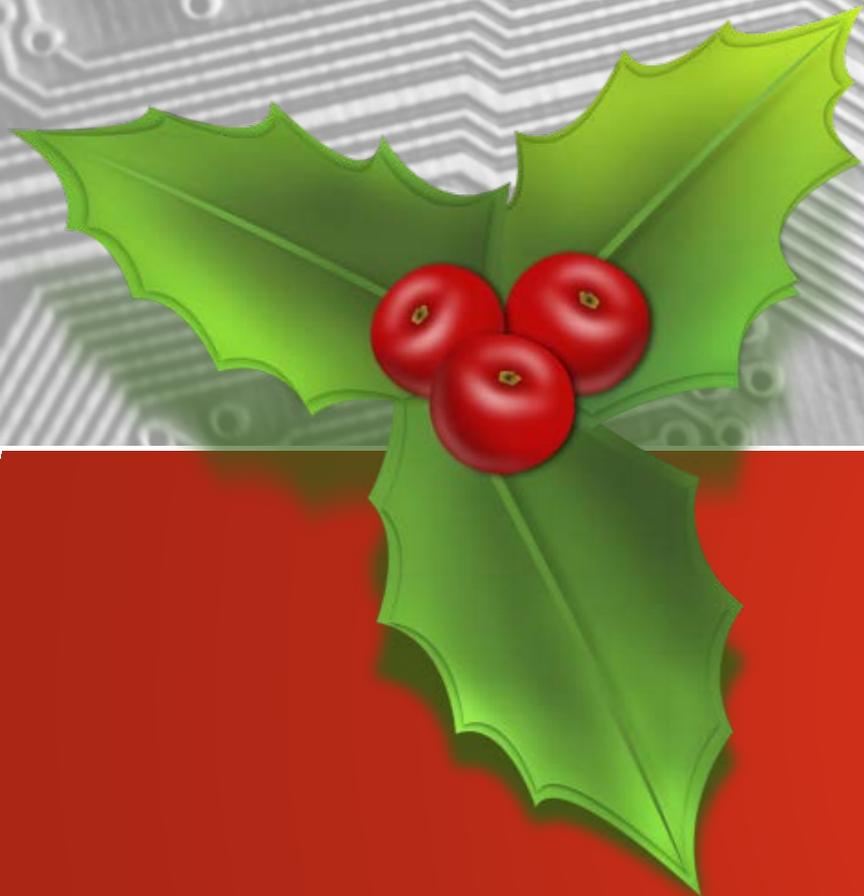
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General information

- The installer can be downloaded from <ftp://ftp.ucamco.com/Integr8tor>
- We recommend you to install this update at your earliest convenience
- For any further questions you may have, please contact our local business partner or the Ucamco helpdesk
- We thank you for choosing a Ucamco product



Ucamco wishes you
a merry christmas
and
a happy and prosperous
2018



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