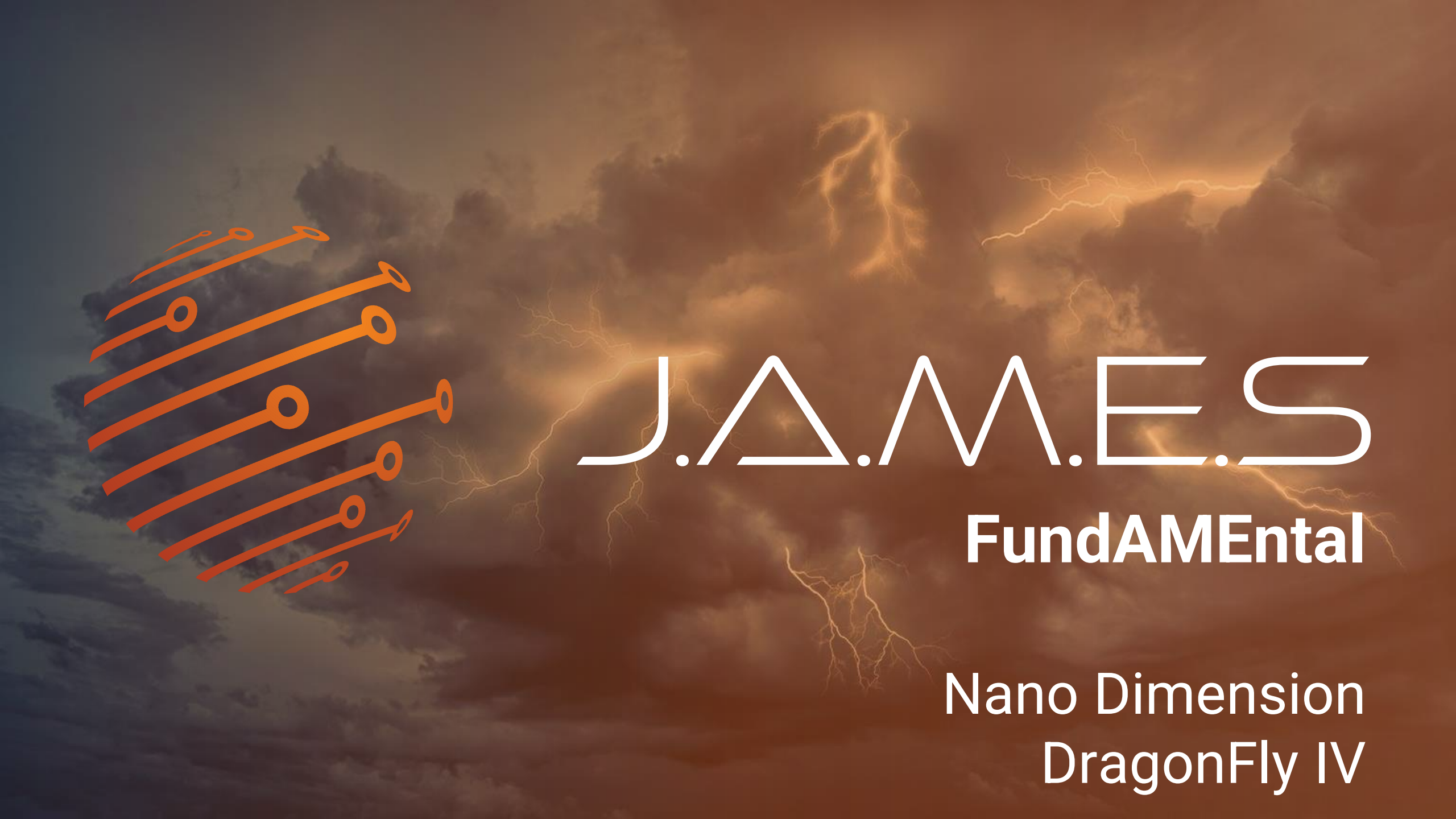

J.A.M.E.S
FundAMEntal
Nano Dimension
DragonFly IV

Additively Manufactrued Electronics

The Technology Behind

MultiJet-Technology

- Nanoparticle Ink for conductive und dielectric Structures

- Electronic structure is build up from scratch to a complete 3D device

3D Multilayer Printed Board
Source: Nano Dimension

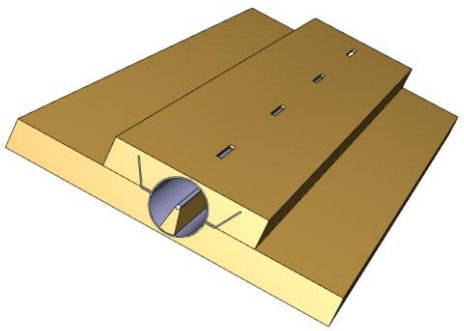
NANODIMENSION

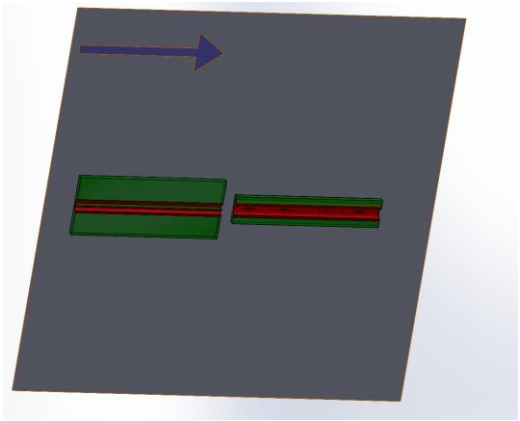
J.A.M.E.S

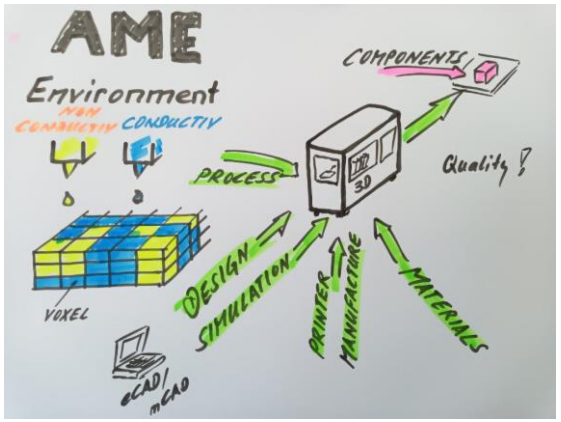
Additively Manufactrued Electronics

Design Flow -
The way from 3D-step files to fully functional electronics

3D-CAD Model → STL-Files → 3D-Slicing tool → Print - File → AME-Printer → 3D AME structure







J.A.M.E.S

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https://j-ames.com

NANODIMENSION

Electrifying Additive Manufacturing®

DragonFly® IV

RESHAPING THE ELECTRONICS INDUSTRY WITH ADDITIVELY MANUFACTURED ELECTRONICS

Design flexibility beyond the traditional boundaries
Breakthrough solution for traditional development challenges
One-stop shop for design and manufacturing

RESHAPE
Performance

RESHAPE
Development Cycles

RESHAPE
Form Factor

PRINTER CAPABILITIES

Build Volume	160 mm x 160 mm x 3 mm
Inks	Optimized silver nano particles and dielectric inks
Supported File Formats	All major ECAD and MCAD Software, ODB++, Gerber & Excellon, STLs
Resolution	18 µm (x), 18 µm (y), 10 µm (z)
Min. Line / Space	75 µm traces/ 100 µm spacing
Min. BGA Pitch	350 µm
Min. Via	150 µm
Min. Dielectric Layer Thickness	10.0 µm
Min. Conductive Layer Thickness	1.18 µm
Conductivity (Relative to Copper)	30% +/-5%
Dielectric Constant (Dk) @ 2 GHz/15 GHz	2.77 / 2.78
Tangential Loss (Df) @ 2 GHz/15 GHz	0.015 / 0.018

PRINTER SPECIFICATIONS

Dimensions	1,400 mm x 800 mm x 1,800 mm
Weight	520 kg, (1150 lbs)
Power Supply*	230 VAC, 20 A, 50–60 Hz
Network Connectivity	Ethernet TCP/IP 10/100/1000
Operational Humidity	Above 35% non-condensing
Operational Temperature	18°C (64°F) to 25°C (77°F)
Regulatory Compliance	UL, CE, FCC
Deposition Technology	Piezo drop-on-demand inkjet
Number of Printheads	2, one for each ink: conductive and dielectric
Software	FLIGHT Software Suite (Design, Verification, Pre-Production)

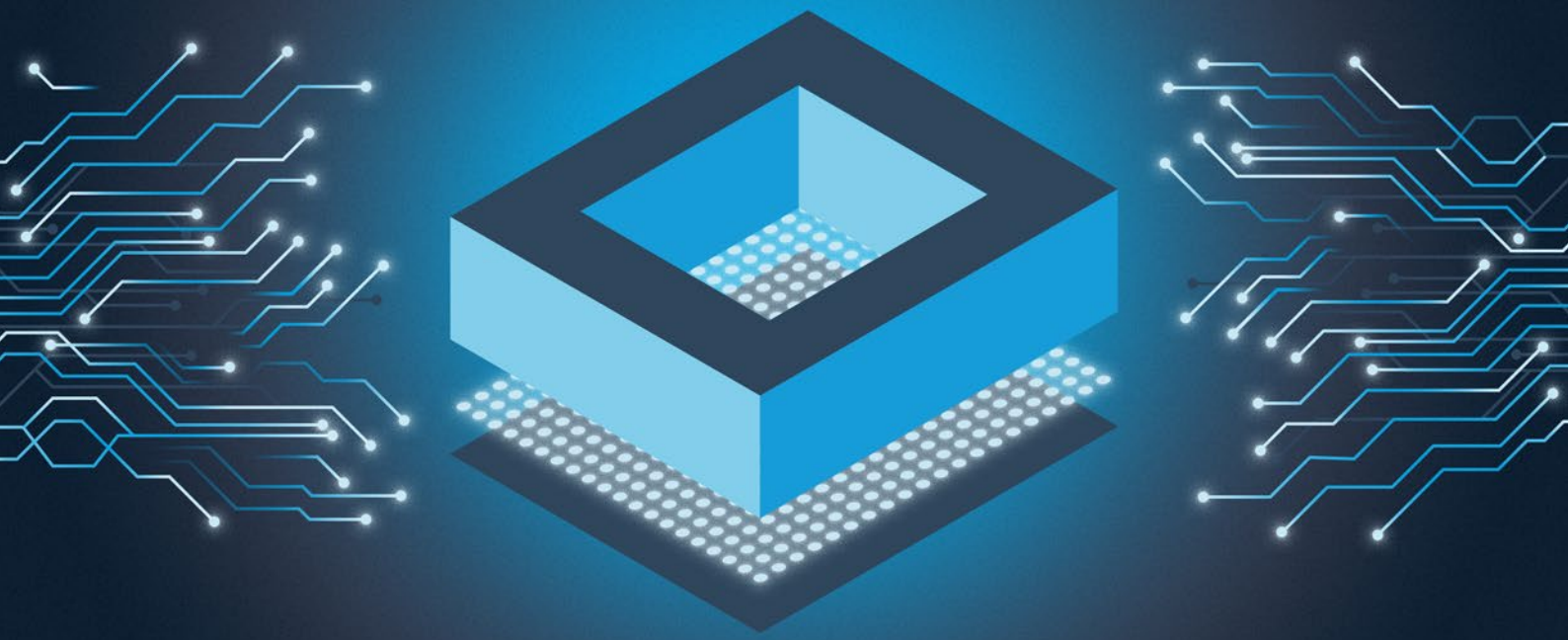
* Must use UPS (Uninterruptible Power Supply)

DragonFly IV®

www.nano-di.com
sales@nano-di.com

NANODIMENSION

Electrifying Additive Manufacturing®



NANODIMENSION FLIGHT

PLAN - CHECK - CONTROL

ENABLING THE THIRD DIMENSION IN ELECTRONICS — 2D TO 3D

Enable

3D AME* DESIGNS

for electro-mechanical devices

Ensure

HIGH QUALITY PRINTING

from design to manufacturing

Shorten

DEVELOPMENT PROCESSES

and time-to-market

*Additively Manufactured Electronics

Seamless Design to Manufacturing with FLIGHT Software Suite

FLIGHT PLAN

Design (ECAD/MCAD)

Turn your PCB into any 3D geometry

Enable ECAD/MCAD collaboration to generate electro-mechanical designs

Workflow

- Export an electrical design from ECAD
- Import an electrical design into MCAD
- 3D representation of the electrical design will appear in MCAD
- Edit and modify electro-mechanical design

FLIGHT CHECK

Design Verification

Verify your 3D design manufacturability

Create a unified design rule file for ECAD (EDA) optimized for the DragonFly IV

Use your exisiting tools and workflow

Workflow

- Export ECAD design rules
- Import design rules to FLIGHT check for automated modification
- Upload modified rule file in your ECAD

FLIGHT CONTROL

Print Preparation

Optimize your additively manufactured electronics process

- Enable 3D printing AME
- Improve productivity by simultaneous design, pre-print and manufacturing processes
- Support industry standard file formats (STL, ODB++, Gerber)
- Enhance rendering accuracy
- Support 2D and 3D design printing simultaneously
- For DragonFly IV and beyond

NANODIMENSION FLIGHT
PLAN · CHECK · CONTROL

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