

Industria 4.0

IMPORTANCIA DE LA TECNOLOGÍA EN LAS INDUSTRIAS DEL FUTURO. DISEÑO COLABORATIVO INGENIERÍA CONCURRENTES

Ernesto Martín
Project Manager – **indigraf**

Castellón, 17 de Marzo de 2016

indigraf

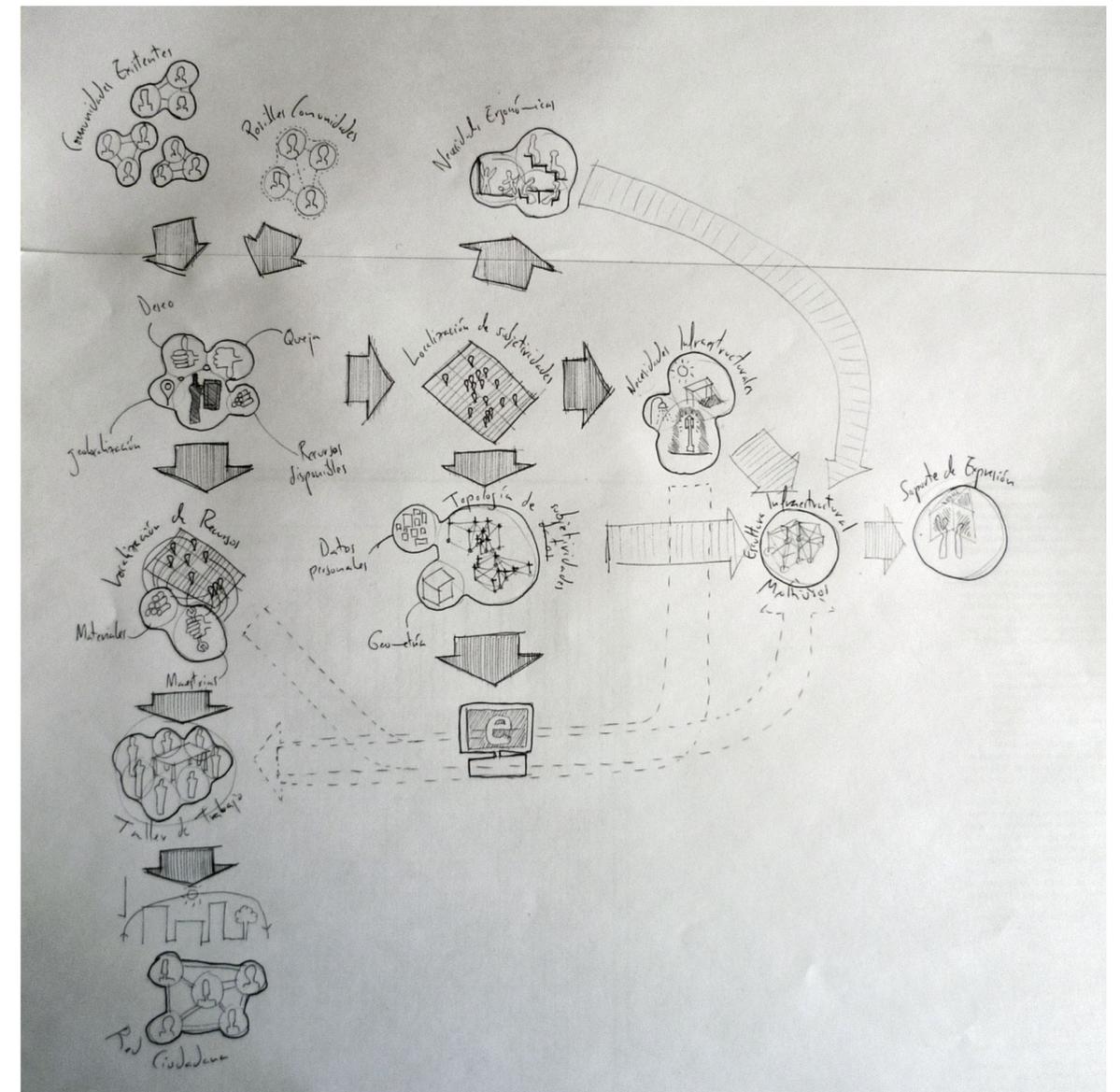
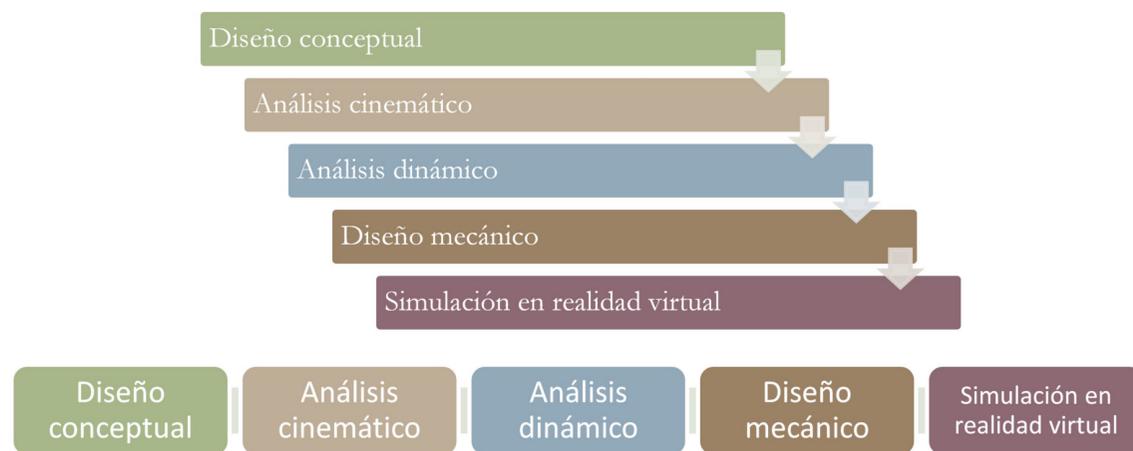


"Proyecto cofinanciado por los Fondos FEDER, dentro del
Programa Operativo FEDER de la Comunitat Valenciana 2014-2020"



INGENIERÍA CONCURRENTE - DISEÑO COLABORATIVO

FILOSOFÍA ORIENTADA A INTEGRAR SISTEMÁTICAMENTE Y EN FORMA SIMULTÁNEA EL DISEÑO DE PRODUCTOS Y PROCESOS, PARA QUE SEAN CONSIDERADOS DESDE UN PRINCIPIO TODOS LOS ELEMENTOS DEL CICLO DE VIDA DE UN PRODUCTO, DESDE LA CONCEPCION INICIAL HASTA SU DISPOSICIÓN FINAL.

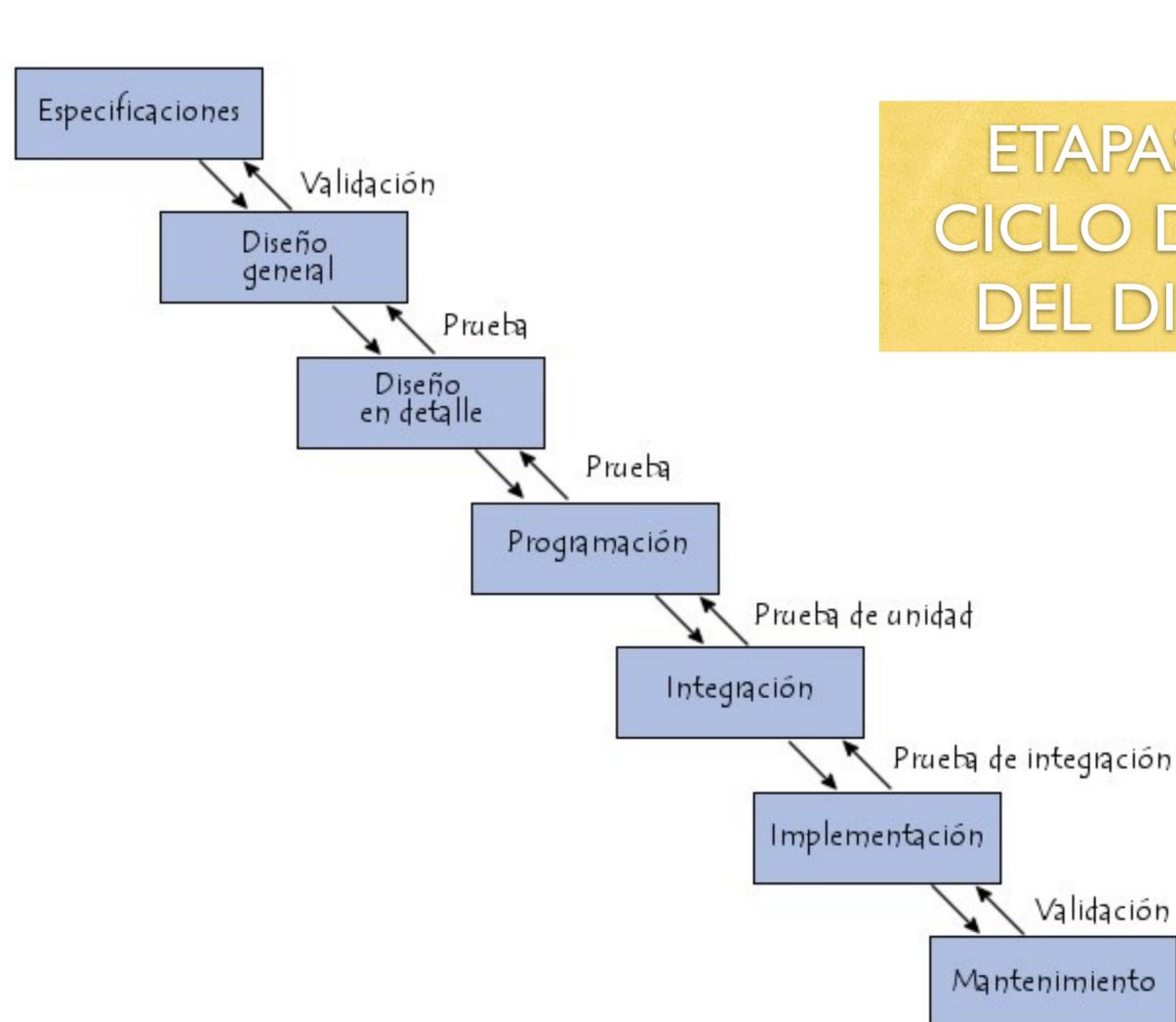


INGENIERÍA CONCURRENTE - DISEÑO COLABORATIVO

REQUISITOS

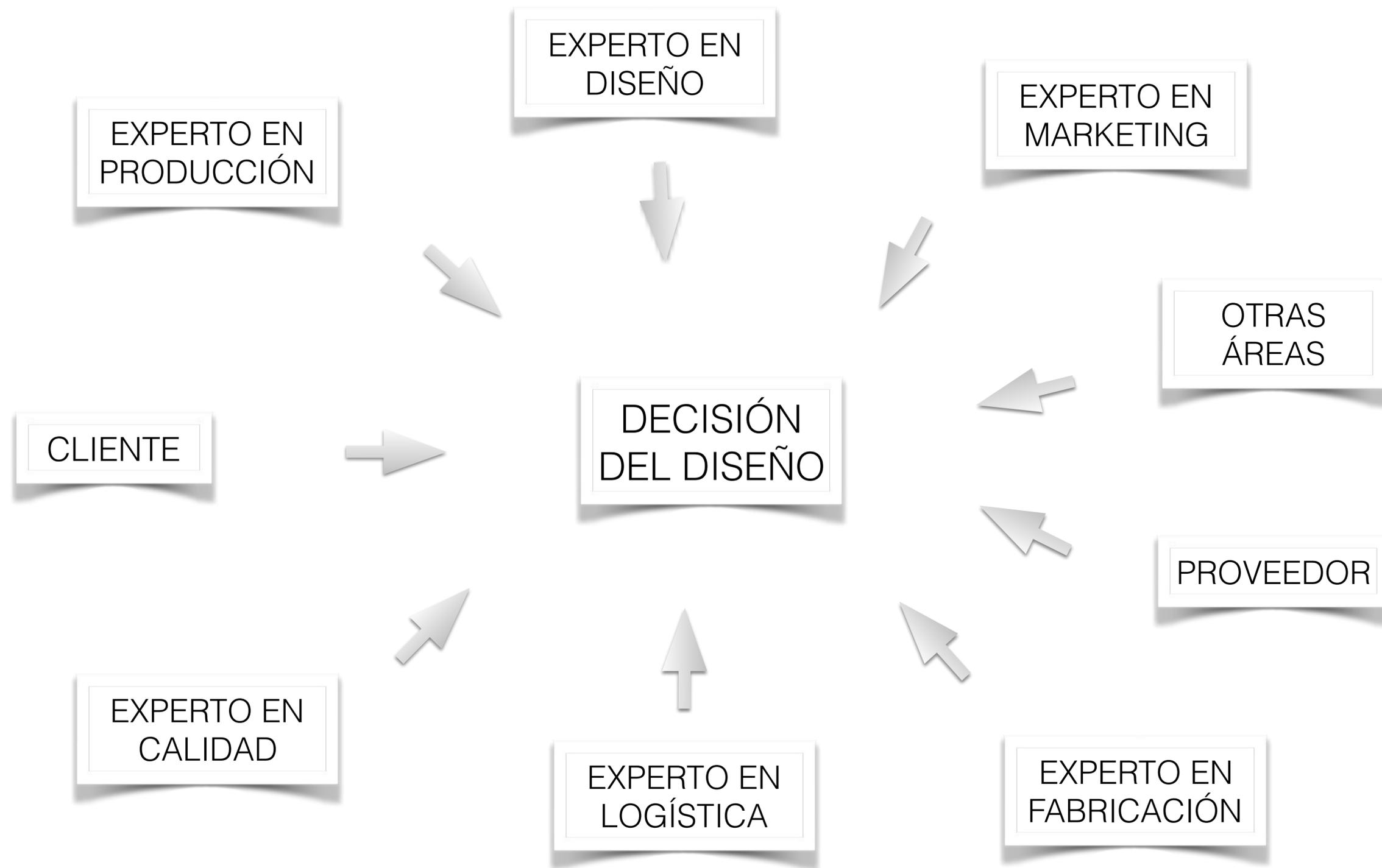
OBJETIVOS

RESULTADO



ETAPAS DEL CICLO DE VIDA DEL DISEÑO







indigraf

Assuring design integrity throughout development to production

PHILIPS
sense and simplicity

Surface Quality Implementation process SOP

Richard Balet
MDD

MDD
Richard Balet

SQI-SOP 020412

PHILIPS SQI Standard Operation Procedure

Project Building	Advise Project Building	AA-1	Volume Surface Creation	Design Surface Startup	Surface engineering	Build Up Final ID	Pattern Implementation	Final Delivery
<p>PHILIPS Design</p> <p>AA-3</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-1</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-2 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-2 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-2 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-2 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-2 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-2 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>	<p>AA-7 (min)</p> <p>Action: Input: Design directions, specifications, range build out and background are shared at all project planning and from Indigraf. Indigraf will be responsible for estimating future needs and meet with PPC and TC.</p>

PHILIPS ID files delivery Tiger 3&4:

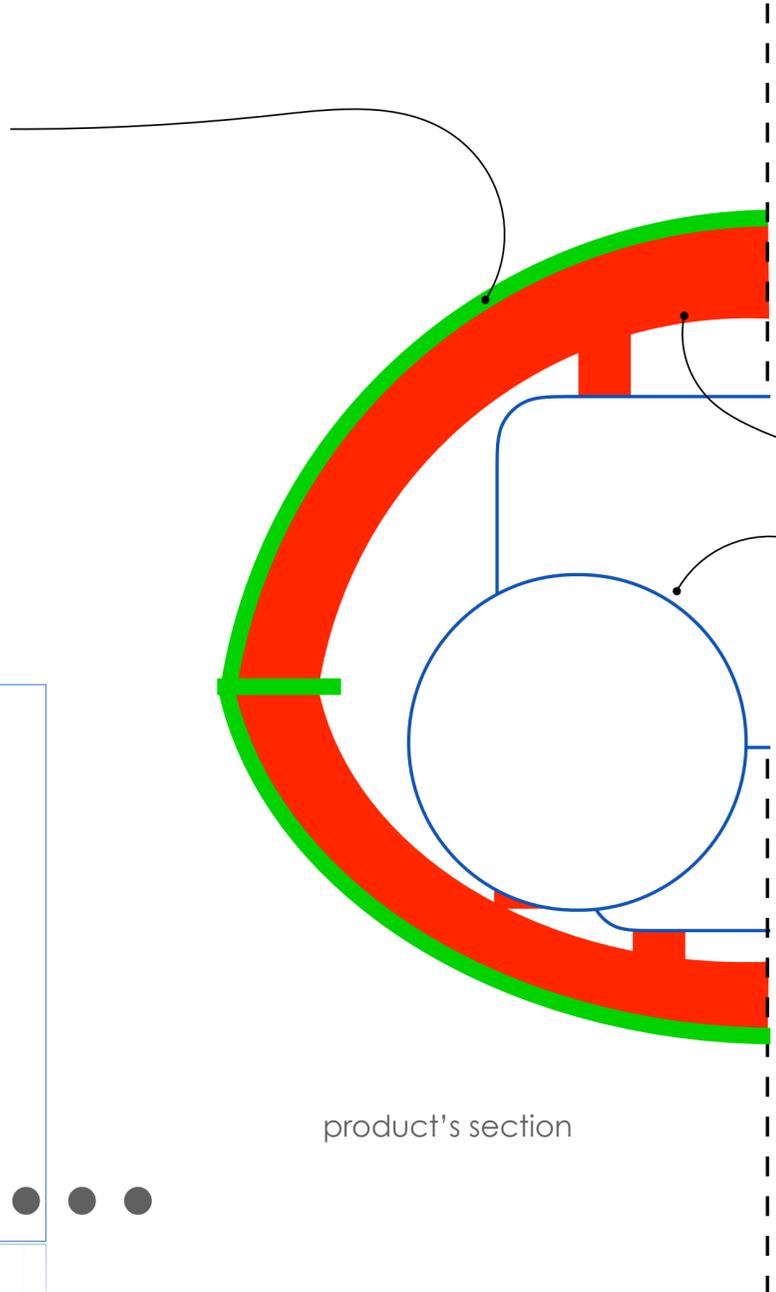
PLEASE CONFIRM THAT YOU HAVE ALL THE FILES INDICATED HERE

Now I'm working to build the details on the front panel and deco frame and new detail on the knob.

All that does not affect the geometry.

- Bracket SQI OK Delivered 14/01/2011
- Deco-Ring Needs minus adjustments delivery 17/01/2011
- Back cover HV SQI OK Delivered 14/01/2011
- Back cover RP delivered 17/01/2011 Flush
- Back cover RP Delivered 20/01/2011 Non flush
- ON/OFF knob Depends on Deco-Ring delivered 17/01/2011 Extra details for 19/01/2011
- Front panel construction for wall thickness Delivered 17/01/2011
- Front panel SQI OK Delivered 14/01/2011
- Frame SQI OK Delivered 14/01/2011

Design:
only Skins



I&D:
wall thickness
connection elements
internal components

product's section

PHILIPS development

Supplier's files

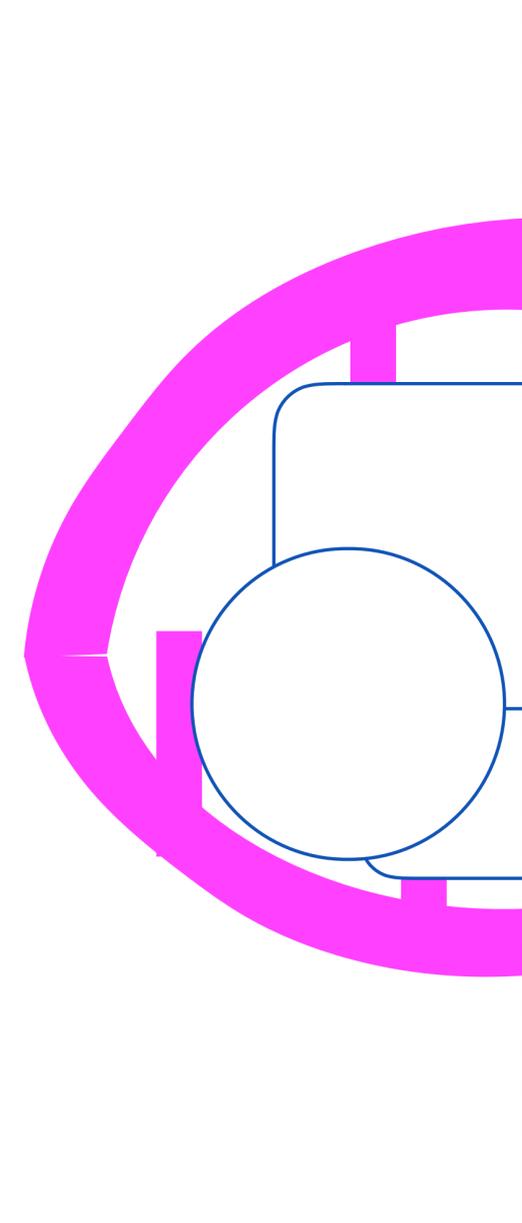
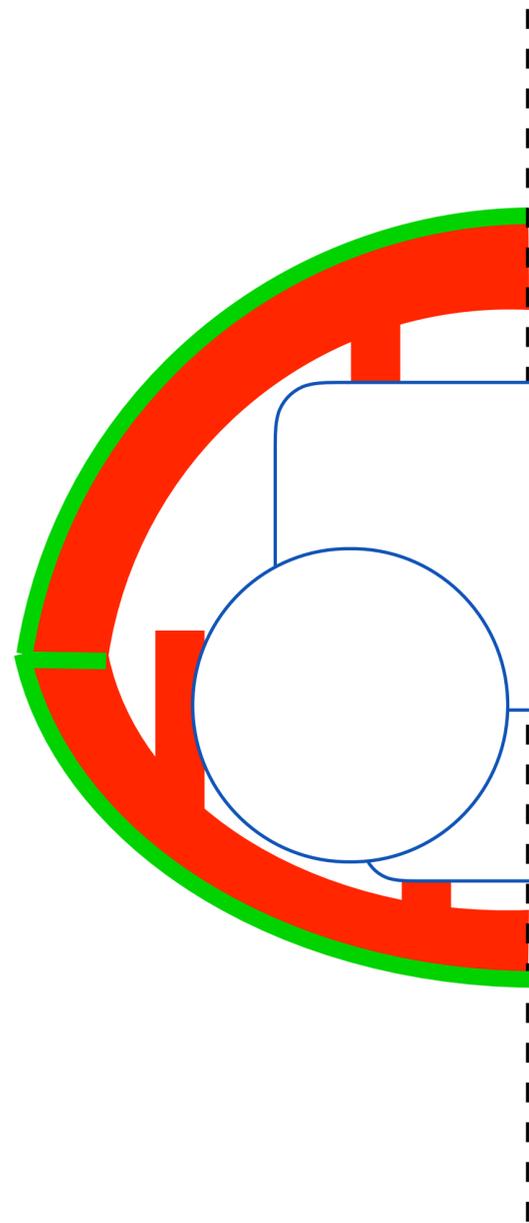
Reserved areas

Design ●

I&D ●

Supplier ●

Components ○



product's section

Reserved areas

Design ●

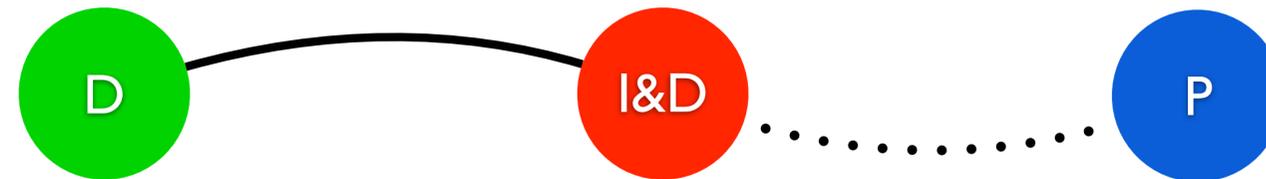
I&D ●

R&D ●

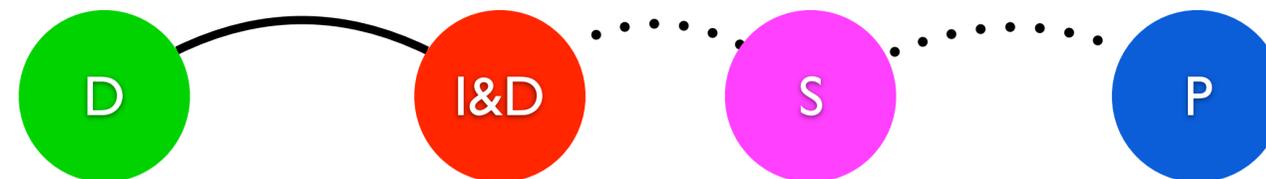
Supplier ●

Product ●

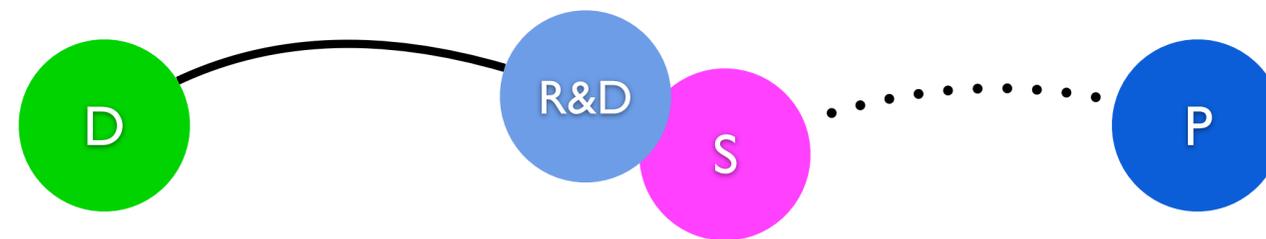
Design info. 



Full in-house development & production



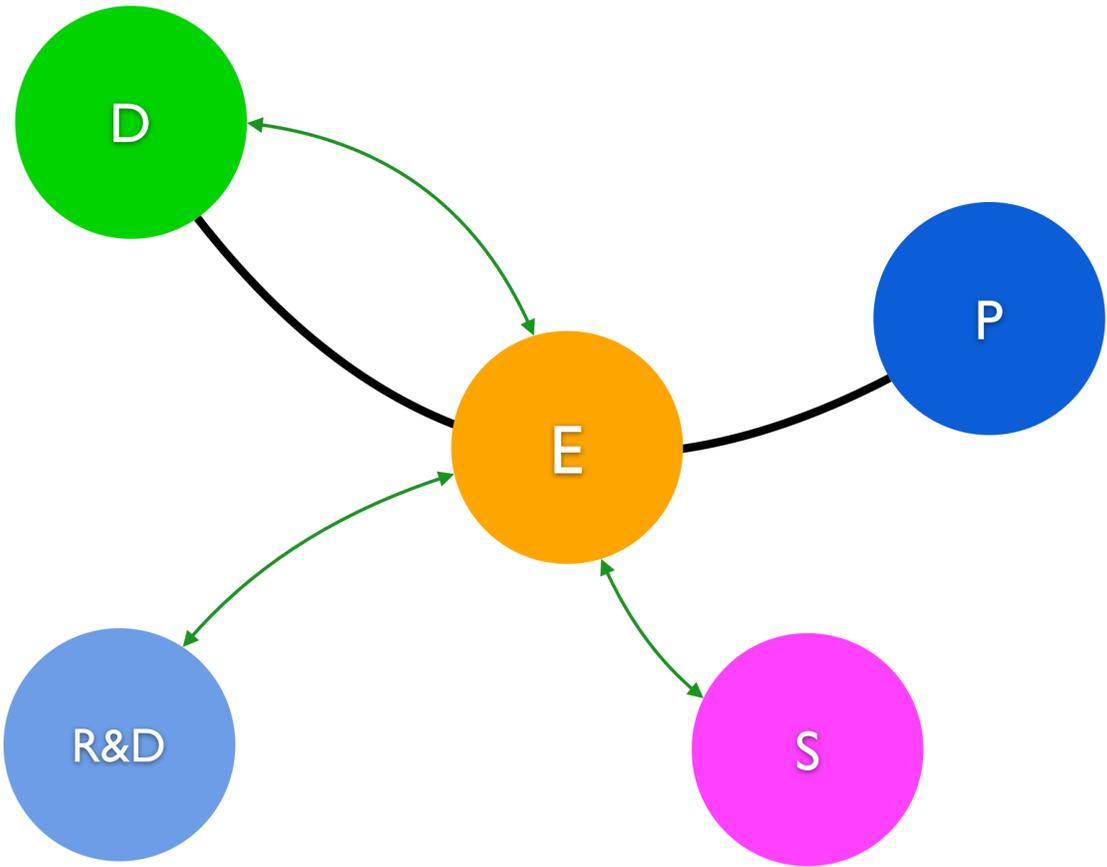
In-house pre-development with **Supplier's** development & production



OEM solution where R&D supervise the development

Reserved areas

- Design ●
- I&D ●
- R&D ●
- Supplier ●
- Product ●
- EPiCC ●
- Design info. 
- information 



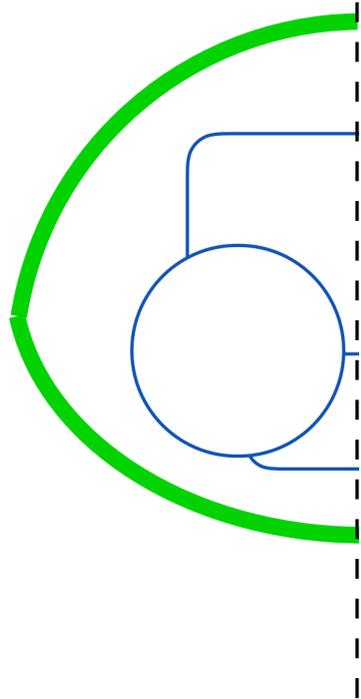
Hong Kong OEM situation with EPiCC live documents for EssentialCare



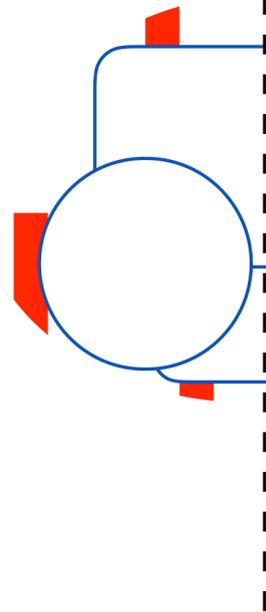
Reserved areas

- Design ●
- I&D ●
- R&D ●
- Supplier ●
- Final Product ●
- EPICC ●
- Components ○

Design intention



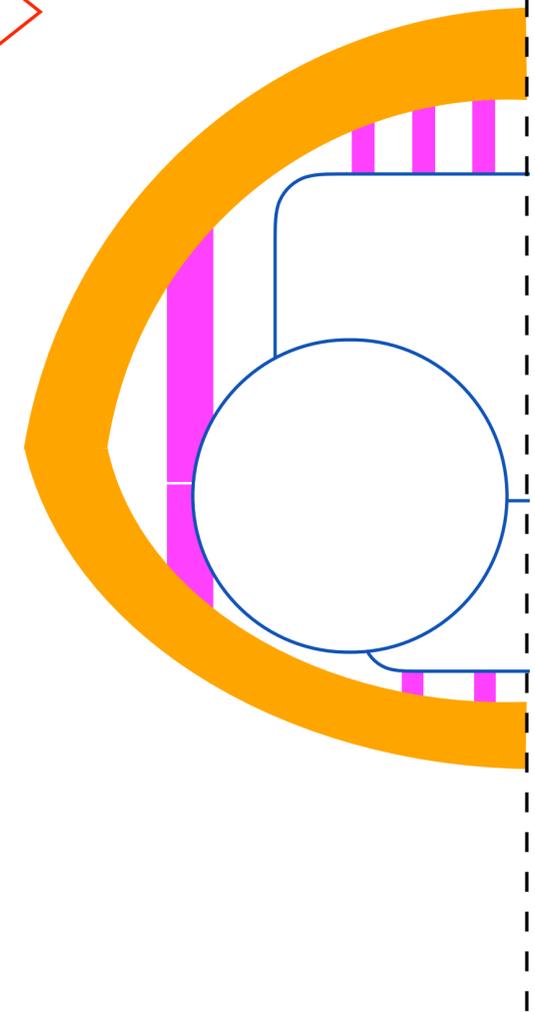
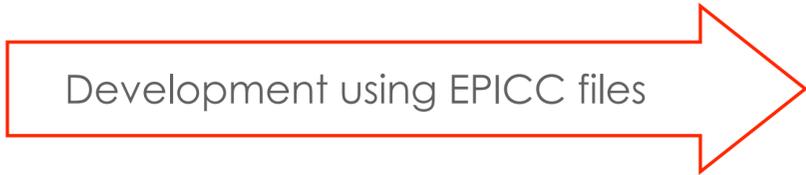
I&D information



EPICC

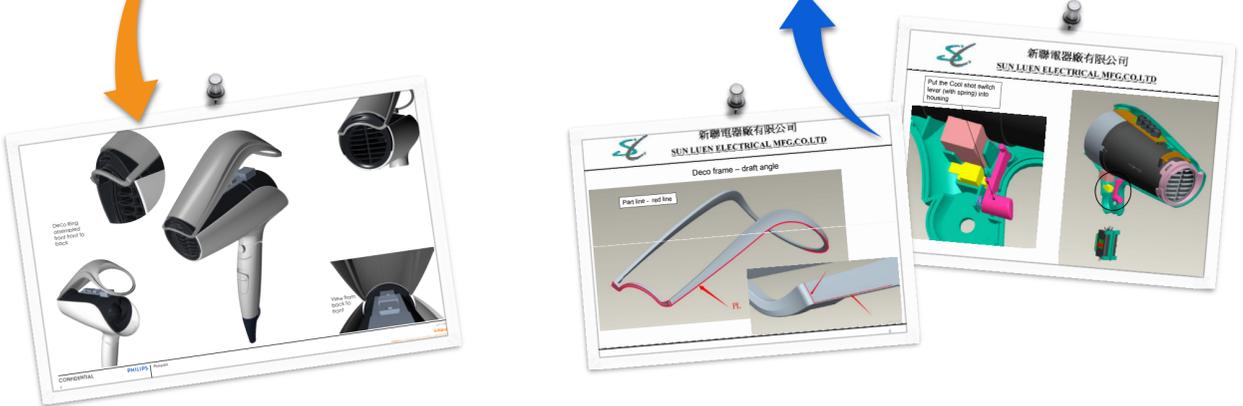
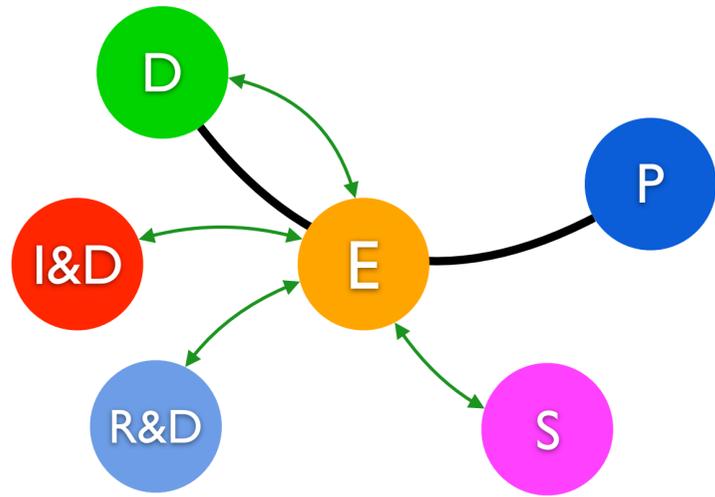


Production file



product's section

One live document source as 3D CAD files for Design, I&D and Supplier access



Inputs

PHILIPS
sense and simplicity

Hair Care Platform
Design for China

Shanghai Design Studio
Gael Frat-Pflaster, Dennis Vetu
June 25th 2013



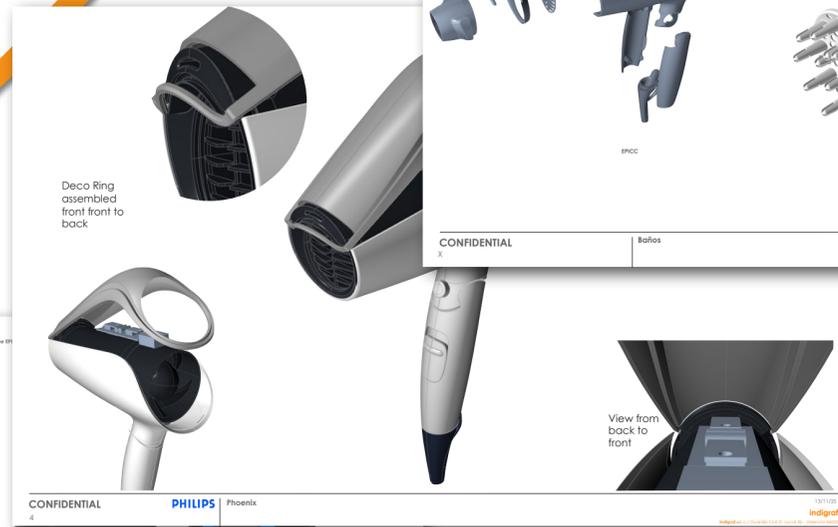
Line drawings and surfaces



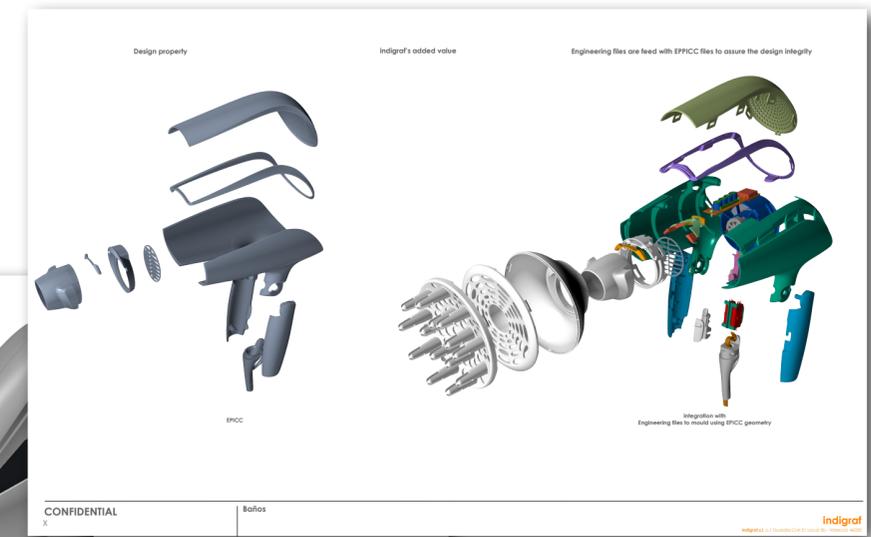
Files for dummies



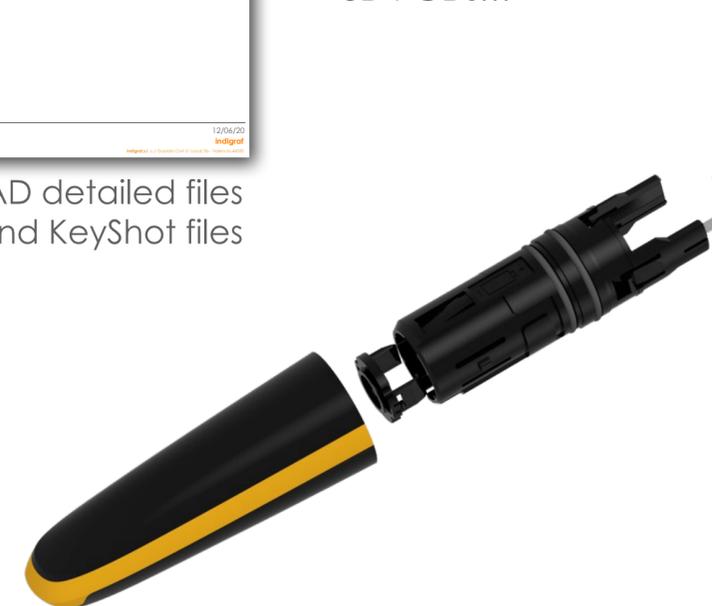
Pre-Engineering files, Assemblies, Mould definition, 3D PGDs...



3d CAD detailed files and KeyShot files



EPICC integration



Integrated design geometry with engineering CAD files





indigraf Thank you



Una manera de hacer Europa

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