TIME FOR REAL "AI"

"Analytical Integration" with "Actual Intelligence"

Kepstrum
INVENTOR OF PRODUCT DNA™ and MODEL-BASED PROGNOSTICS

The Essence of Advanced Engineering

In Advanced Engineering (AE), we hire "Dr.-Ing.", "Dipl.-Ing.", and other engineering graduates not just for their capabilities in using science and math to craft economical solutions to technical challenges, but also for the underlying passion that fueled their academic pursuits: a genuine love for analytics, math, and physics. These engineers are the vital bridge between AE teams and the newest scientific breakthroughs. While they come with a fresh, disciplined perspective on analytical problem-solving and the latest scientific principles, it's essential they are equipped with the right tools to collaboratively turn that knowledge into tangible solutions. **Kepstrum's DNA Structured Platform** (**DSP**), based on its embedded "Method for deterministic stress-based risk reduction" (Patent No. US20140081583A1), introduces the "**Digital Spec to Digital DNA**" development process that places analytics at the core of the Advanced Engineering team's development processes.

Engineering graduates are the vital bridge that connect new scientific breakthroughs to AE teams and the world...

Degrees of Passion

The hard work that goes into earning a PhD in engineering, including completing graduate courses, publishing in esteemed journals, and defending an original contribution to engineering physics, reflects an engineer's deep passion for analytics and their field. After this, engineers stand at a crossroads: continue in academia or jump into the hands-on world of R&D.

The benefit of **academia**? The freedom to teach and continue research. But it risks **distancing engineers from the real-world application of their learnings**.

In **R&D**, engineers are the industry's heartbeat, blending science with hands-on solutions. However, this path may trade free research exploration for structured delivery.

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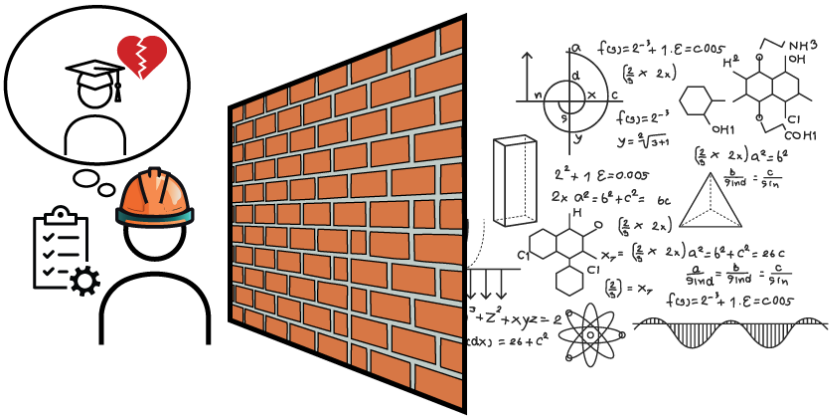
Beyond Simulation and Procedural Project Delivery

In some cases, joining an organization's predefined development process can sometimes confine engineering graduates to a procedural environment where the opportunities to use and grow their analytical skills are limited by the completion of day-to-day tasks and reliance on simulation tools. Relying heavily on simulation packages "outsources" analytical thinking to software vendors, who may be disconnected from the exact applications in which their simulation packages are being used. While these tools offer valuable insights and simplify complex models, they can turn engineering tasks into routine procedures, bound by the software's inherent constraints, that detach engineers from the core physics that sparked their interest.

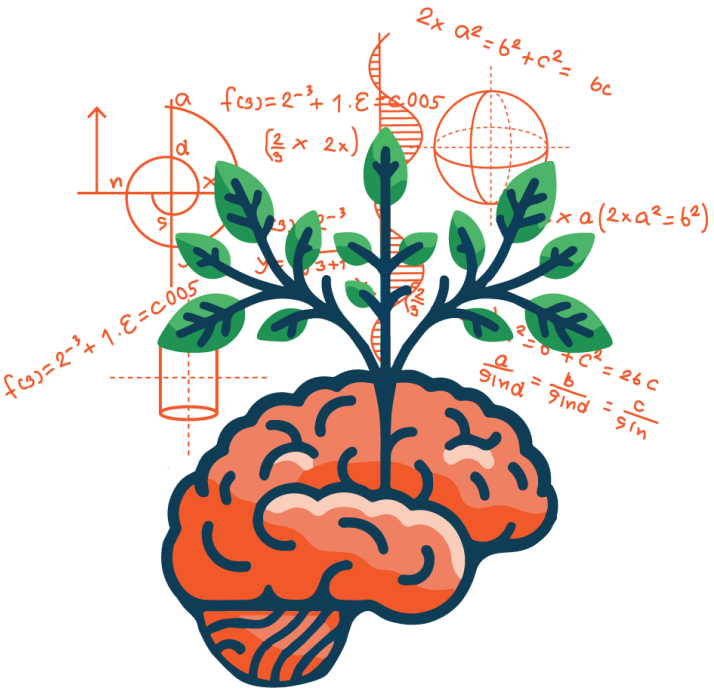
Engineers in AE teams have the ability to critically assess simulation results, validate models, and understand the software's assumptions and limitations; they just require a platform where they can interact with the lumped parameters and closed-form equations foundational to simulation packages, rather than merely accepting preset ones.



"Procedural project delivery can distance engineers from the foundational physics that ignited their passion..."

Nurturing Analytical Passion

Advanced engineers are not simply process-driven; they thrive on specific goals, deeper analytical understanding, and the opportunity to integrate that knowledge into the systems they work with. So, the question we must address is: How can we maintain and even amplify this enthusiasm? To convert this enthusiasm into performance, it's essential to provide a platform where engineers can freely absorb, analyze, and experiment—a playground for both intellectual curiosity and technical proficiency.



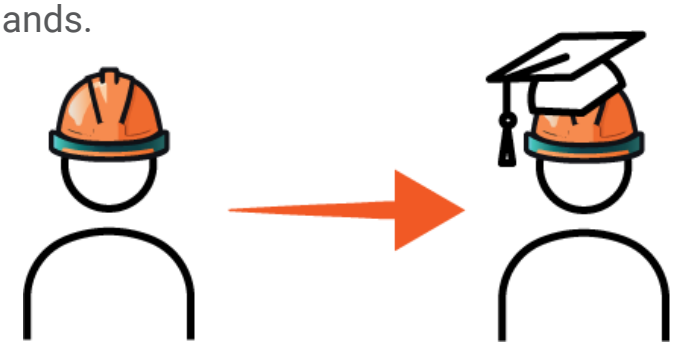
DSP: A Platform for Analytical Engineering

Kepstrum's DNA Structured Platform (DSP) serves as this analytical playground, offering the tools and flexibility for engineers to engage with core scientific principles and flex their analytical muscles. DSP introduces the "Digital Spec to Digital DNA" development process that starts with our "Method of making a Digital Specification" (Patent Pending No. US18/107,075) to visualize multi-stress interactions and transform functional requirements into functional profiles, called "**Digital Spec.**". These profiles are then used as inputs to the DNA algorithms inside DSP to generate **Product DNA™**, a comprehensive stress-life model representing an organization's deepest knowledge about how a product will behave under various conditions and for how long before it fails.

At its core, Product DNA™ introduces a physics-based analytical approach to product development that allows engineers to directly express their decisions and designs in terms of the underlying application of physics and understanding of material properties that collectively define a product's functions and limitations. By giving engineers the freedom to interact with the analytical underpinnings of their work, we not only nurture their love for analytics, but also ensure knowledge transfer, fostering a smooth transition from one generation of products — and engineers — to the next.

Driving Innovation: The Imperative of Analytical Engineering

The essence of Advanced Engineering lies in harnessing the analytical passion and expertise of engineering graduates. For AE departments, the ultimate goal should be to amplify the innate passion and rigorously trained analytical skills of these engineers by fostering an environment with the same commitment to learning that academia offers. It is imperative to provide engineers with platforms like DSP that prioritize analytics and encourage engineers to integrate both engineering physics and analytical exploration into their procedural project delivery. By championing analytical skills and providing the right tools and environment, organizations can innovate, meet current challenges, and prepare for future demands.



Nurture the analytical passion of your engineers with DSP, and let's shape the future of Advanced Engineering together.

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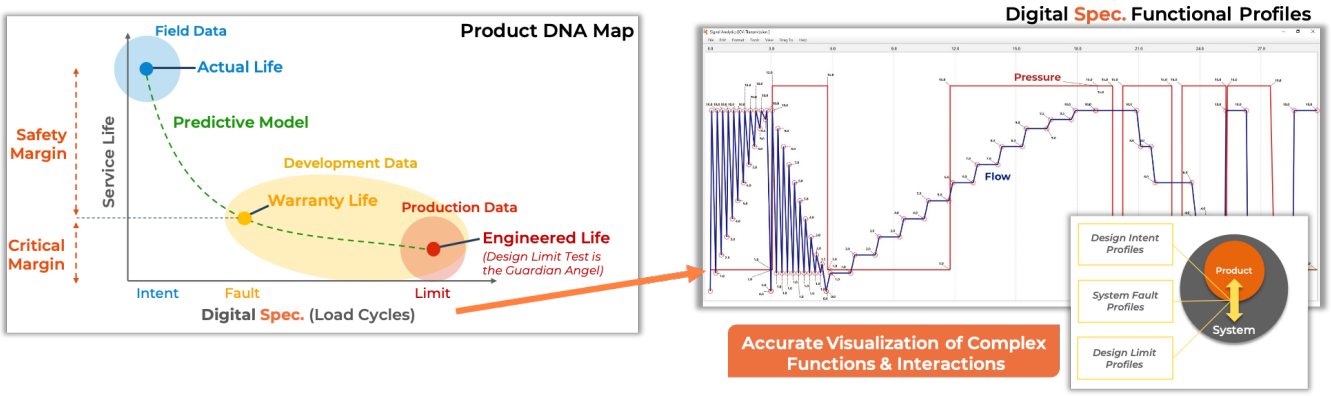
About Kepstrum:

Kepstrum is the inventor of **Product DNA** (**Design Limit, Nature of Failure, Actual Life**). With core competencies in engineering physics and software engineering, it is the patent holder of deterministic risk reduction methodologies and technologies to map Product DNA, through its innovative software platform, named Kepstrum's DSP.

Kepstrum's DSP (**DNA Structured Platform**), is an enterprise-level collaborative software with a revolutionary digitalization approach. DSP replaces files with maps, and words with profiles to generate digital specifications (**Digital Spec.**) that are used as inputs to its engineering analytics to configure product mechanisms and predict failure-life models (**Product DNA**).



DSP empowers Advanced Engineering Teams to use scientific and engineering principles to solve problems and develop new processes, products, and technologies. DSP ensures that Model-Based solutions are retained, transparent, traceable, globally accessible and transferable to the **new generations of engineers and products**. DSP revolutionizes the traditional transformation of "Applications to Product Functions" using the "Digital Spec. to Digital DNA" process. DSP enables R&D engineers to predict the concept's DNA, in less than 8 weeks, as the fundamental step to meet OEM's new **Virtual Validation** demands. DSP provides organizations with a significant analytical bandwidth to compete in this agile market shift using limited resources.

Kepstrum's mission is to advance **Model Based Systems Engineering** (**MBSE**) by commercializing **physics-based analytics** and is an advocate for the adoption of **deterministic design** processes (by removing random features at the conceptual level) for new developments without history over traditional experience-based and probabilistic design methods.

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