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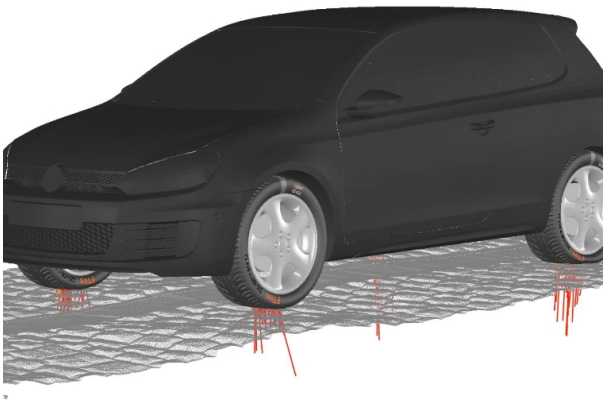
Virtual Proving Ground

The integration of **IDIADA Spain Virtual Proving Ground (ISVPG)** with testing and simulation software has strengthened virtual development and validation activities by offering new virtual scenarios for different applications such as comfort/durability simulations, ADAS and Autonomous Driving system development and driving simulator activities. ISVPG supports development activities by having the most important surfaces of Applus IDIADA's proving ground in Spain scanned in high resolution.



ISVPG reproduces all the macroscopic unevenness and irregularities of the real surfaces, supporting **correlation activities** by using an adequate **representation of the road inputs**. The data is ideal for **multibody** and **FEM simulation**, **ADAS** and **autonomous driving development** activities (either simulation or test where high-definition maps are required) and **driving simulator applications**.

- ISVPG reproduces with high-accuracy real road inputs within **simulation software**, ensuring a **high level of correlation** with road/track testing.
- Enhances the potential of **virtual development of components**, **control systems** and **full vehicles.**
- Accounts for the early stages of the **vehicle development process** demands in terms of **Comfort**, **NVH**, **Structural Durability**, **Control Systems** and **Driver Models** in order to identify and solve further problems. This saves the financial and time costs associated with on-road/track test sessions and design process.

Applications:

- Comfort and ride analysis
- ADAS, autonomous driving system development and validation
- Integration into driver-in-the-loop (DIL real-time systems)
- Active system development and test planning
- Tire development

Technical Specifications:

- The virtual data is available in several industry standard formats
- The following formats (not being an exclusive list) are available to be used in simulation software such as main Multibody, FEM, vehicle dynamics and ADAS development software.
    - 3D encrypted CRG format within MSC. ADAMS/Car and Altair
    - RGR format for any cosin FTire compatible application
    - Road Surface as rFpro TerrainServer model and VI-grade offline format
    - Opendrive and NDS formats to be used under ADAS/AD simulations
        - HERE Marketplace
    - Other formats (e.g. HD maps) and track characteristics such as signalling or environment information can also be obtained upon request under standard or customized formats
    - Micro-structural information up to 60 micrometers as contact patch trajectories

Distribution Partners:

Looking for seamless integration with majority of simulation applications, ISVPG data is available in multiple offline and online formats through a series of partners. If standardized solutions do not meet your application requirements, a customized solution might be considered and got directly from Applus IDIADA.

IDIADA Spain Virtual Proving Ground (ISVPG) video:

Virtual Proving Ground webinar: Accelerating your virtual development with Digital Twins:

The Virtual Proving Ground webinar recorded on June 2020 shows how our Vehicle Dynamics team integrate Digital Twins in their chassis development methodologies from early design phases to advanced validation activities.

Using the same test site for physical and virtual testing brings multiple benefits to development projects such as efficiency, safety and a more realistic overall experience.