

Maîtriser l'innovation en simulation numérique

Le programme officiel de formation DEP MeshWorks

**CATALOGUE
FORMATION**
2024 v1.0



Transformez votre expertise CAE

Élevez vos capacités de conception à de nouveaux sommets avec une formation de pointe qui promet une efficacité et une maîtrise inégalées en simulation numérique. Découvrez la puissance de DEP MeshWorks et transformez les défis d'ingénierie en opportunités d'innovation.

DEP
MeshWorks

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PREAMBULE

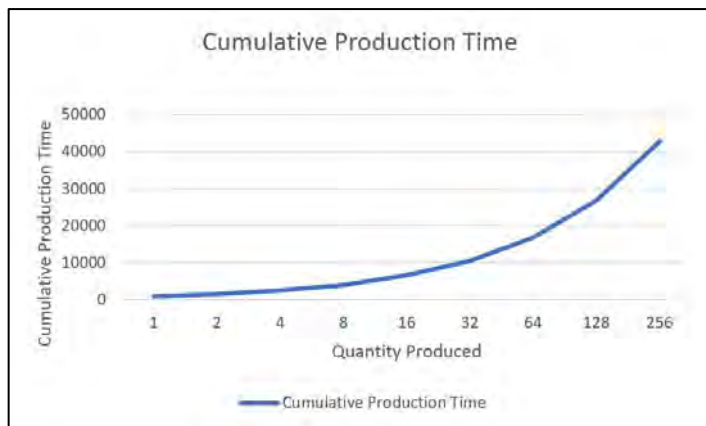
Débloquez l'excellence CAE avec la formation DEP MeshWorks

Chez Dynas+ Engineering Products, nous comprenons que le cœur de l'innovation réside dans la capacité à optimiser. Notre formation DEP MeshWorks est méticuleusement conçue pour doter les ingénieurs calcul d'une compétence sans pareil dans le logiciel de pointe qui façonne l'avenir de la conception d'ingénierie.

Entamez un voyage d'apprentissage qui renforce votre expertise, rationalise votre workflow calcul et maximise le retour sur investissement.

Efficacité d'apprentissage

Plongez dans une expérience d'apprentissage conçue pour une maîtrise rapide. Notre programme est structuré pour accélérer votre progression du novice à l'expert, en garantissant que chaque session de formation ait un impact profond sur vos compétences et votre compréhension.



Supériorité logicielle

DEP MeshWorks se situe au sommet des solutions de modélisation et de maillage, offrant un mélange inégalé de sophistication et de convivialité. Nos sessions de formation mettent en lumière les capacités robustes du logiciel en matière de maillage, de morphing et d'accélération du workflow calcul.

Retour sur investissement pour les ingénieurs

Investir dans la formation DEP MeshWorks est un investissement dans votre avenir. Les compétences et techniques acquises ne sont pas seulement pour l'amélioration immédiate des projets ; elles constituent un atout de longue durée qui continuera à produire des rendements.

Choisissez une formation DEP MeshWorks – où le logiciel rencontre l'expertise, et le potentiel rencontre la réalisation.

Dynas+ Engineering Products est le Centre Technique et le revendeur officiel de DEP MeshWorks pour le territoire européen.



Certifié DataDock

Numéro d'enregistrement de l'organisme de formation:

73 31 10135 31



FORMATEURS

Les intervenants des sessions de formation sont :

- pour 90% des experts techniques Dynas+ Engineering Products (**DEP EUROPE**),
- pour 10 % des experts techniques Detroit Engineered Products. (**DEP USA**).

Les formateurs ont une expérience significative de DEP MeshWorks et en tant que formateur. Les noms des formateurs prévus pour chaque formation sont indiqués dans la fiche descriptive associée.

ACCESSIBILITY

Notre offre de formation est accessible à tout public, n'hésitez pas à nous faire part de toutes demandes spécifiques afin d'adapter au mieux nos modalités de formation .

Pour toute information ou pour vous inscrire :

formations@depeurope.com ou ☎ +33 (0)5 61 44 54 98

Notre référent handicap est Charlotte MICHEL :

c.michel@dynasplus.com ou ☎ +33 (0)6 33 67 07 58

Formation INTER-entreprise

Sessions régulièrement programmées qui favorisent l'apprentissage collaboratif avec des pairs de diverses organisations. Notre Calendrier de Formation complet est votre guide pour les prochaines dates. Nous sommes à l'écoute de la demande : des sessions supplémentaires peuvent être organisées pour répondre à vos besoins.



Formation INTRA-entreprise

Événements de formation exclusifs, planifiés en fonction de la disponibilité de votre équipe. Réalisées sur site, dans vos locaux ou dans nos centres de formation de pointe, ces sessions garantissent un environnement d'apprentissage concentré et adapté à votre entreprise.

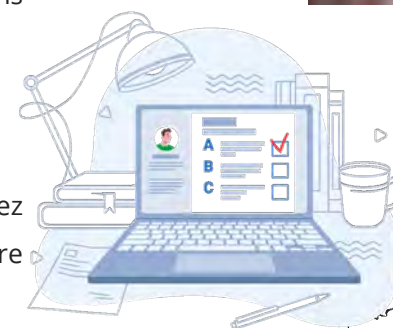


Formation Personnalisée/Spécifique

Formation sur mesure conçue autour de vos exigences spécifiques. Que ce soit dans vos locaux ou les nôtres, ces sessions sont modelées pour relever les défis uniques auxquels vos ingénieurs sont confrontés.

Formation à Distance par Visio-conférence

Notre engagement envers l'accessibilité et la commodité se manifeste dans nos options de formation à distance. Interagissez avec nos experts en temps réel via WebEx, assurant une expérience d'apprentissage interactive et pratique qui reflète notre excellence en personne.



Nos Centres de Formation

Explorez nos sites de formation sur la carte ci-jointe et sélectionnez le lieu qui convient le mieux à votre parcours de développement professionnel.



	INTER-entreprise	INTRA-entreprise	Personnalisé/Spécifique	À distance par visio-conférence
Participants	Jusqu'à 8	Jusqu'à 6	Adapté aux besoins du client	Jusqu'à 5
Lieu	Centres de formation DEP	Site du client ou centre de formation	Site du client ou centre de formation ou par visio-conférence	En ligne
Agenda	Planifié (voir Calendrier)	Sur demande	Sur demande	Sur demande
Contenu	Standardisé	Adaptable	Sur mesure	Adaptable
Interaction	Participants d'entreprises mixtes	Participants d'une seule entreprise	Focus sur les objectifs du client	A distance en direct
Ressources	Fournies par DEP	Fournies par DEP ou le client (en fonction du lieu)	Fournies par DEP ou le client (en fonction du lieu)	Fournies par le client & logiciel/licences par DEP
Tarification	Par participant	Tarif fixe pour le groupe	Selon la préparation	Tarif fixe pour le groupe
Objectif	Amélioration générale des compétences	Apprentissage en équipe	Objectifs spécifiques	Apprentissage accessible et flexible
Avantages	Réseautage, Economique si < 3 participants	Confidentialité, Commodité, Economique si > 2 participants	Très pertinent et exclusif Confidentialité, Commodité	Sûr, Sans déplacement, Accessible
Idéal pour	Croissance individuelle, Découverte générale	Constitution d'une équipe, Besoins spécifiques d'une équipe, Confidentialité	Défis ou projets spécifiques, Besoins très spécifiques d'une équipe, Confidentialité	Equipes internationales, Apprentissage continu, Besoins flexibles ou à distance

Lire les conditions générales



Intéressé(e) ? N'hésitez pas à nous contacter à formations@depeurope.com pour élaborer ensemble un programme personnalisé qui réponde au mieux à vos besoins.



NOS FORMATIONS

Notre mission

Plusieurs centaines de personnes ont déjà bénéficié de notre expertise et ont transformé leur flux de travail grâce à nos formations. Nos formations de haute qualité et certifiées sont conçues par plusieurs experts, et notre progression pédagogique a été pensée pour maximiser votre montée en compétence requise pour atteindre vos objectifs de productivité.

Formations « Basics », « Complementary », « Advanced » and « Specialist »:

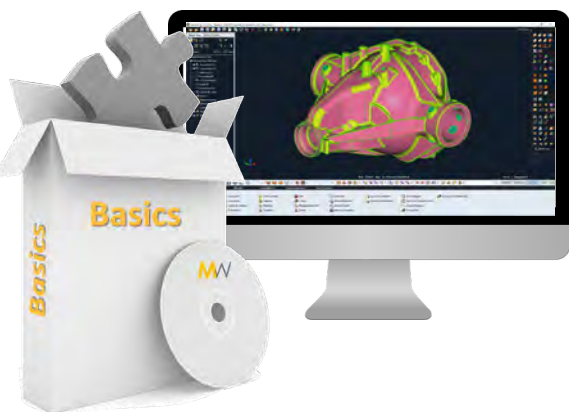
Nos formations ont été divisées en 4 catégories en fonction des prérequis et des cas d'application ciblés.



















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Formations « Basics » :

Apprenez à utiliser DEP MeshWorks sans aucun prérequis et à accélérer votre flux de travail de maillage en maximisant la qualité et l'efficacité. En fonction de vos besoins et de votre application, plusieurs options de cours sont disponibles :



- | | | |
|----------------|--|---|
| BAS-01Q | Les fondamentaux de DEP MeshWorks avec focus Maillage QUAD  | 3 jours  |
| BAS-01H | focus Maillage HEXA  | 3 jours  |
| BAS-01T | Maillage TETRA  | 3 jours  |
| BAS-02 | Les fondamentaux de DEP MeshWorks avec focus Maillage CFD  | 3 jours  |
| BAS-03 | Les fondamentaux de DEP MeshWorks : Techniques complètes de Maillage  Meilleure Vente | 4 jours  |
| BAS-04Q | Transition Efficace vers DEP MeshWorks : Maillage QUAD Accéléré  | 1 jour  |
| BAS-04H | Maillage HEXA Accéléré  | 2 jours  |
| BAS-04T | Maillage TETRA Accéléré  | 1 jour  |

Fiches descriptives
des cours



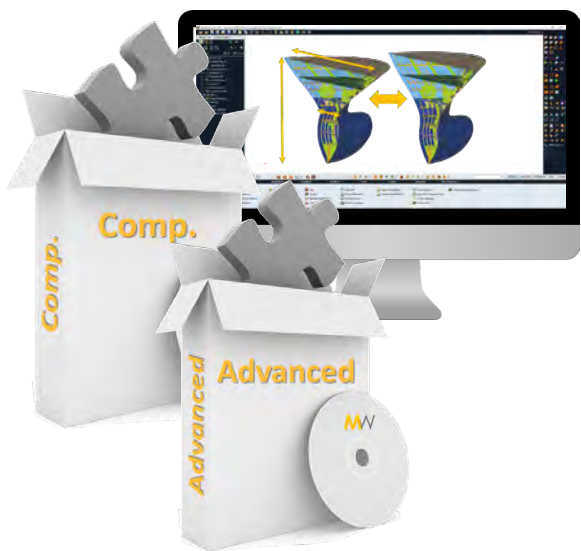
Planifiées au calendrier



A planifier en fonction des demandes

Formations « Complementary » & « Advanced » :

Apprenez à utiliser les applications complémentaires à valeur ajoutée de DEP MeshWorks avec le prérequis Basics.



- | | | |
|----------------|---|--|
| COMP-01 | PRE -Traitement : Intégration Multi-Solveurs et Montage efficace | 0,5 jour |
| COMP-02 | POST -Traitement : Amélioration de l'Analyse | 0,5 jour |
| COMP-03 | Accélération du workflow calcul : Techniques de Morphing | <div style="border: 1px solid orange; padding: 2px; display: inline-block;">Meilleure Vente</div> 1 jour |
| ADV-01 | Morphing CAO | 0,5 jour |
| ADV-02 | ' Process Automation ' : Optimisation du workflow calcul | 3 jours |
| ADV-03 | Couplage avec LS-OPT pour un dimensionnement Optimisé | 0,5 jour |

Fiches descriptives
des cours



Planifiées au calendrier

A planifier en fonction des demandes

Formations « Specialist » :

Apprendre à utiliser les technologies spécialisées de DEP MeshWorks avec le prérequis Complementary ou Advanced.



- | | | |
|---------------|---|------------|
| SPE-01 | ConceptWorks – Révolutionner la Conception de la Caisse/Tôlerie 💡 | 1 jour 🕒 |
| SPE-02 | ConceptWorks Plastiques – Conception Automatisée 💡 | 0,5 jour 🕒 |
| SPE-03 | Maitrise du ' Full Vehicle Morphing ' : Redéfinir la Conception de Véhicules 🚗 | 🕒 |
| SPE-04 | Maillage HEXA Avancé pour Pneus : Accélération de la Conception de Pneus 🌐💡 | 1 jour 🕒 |
| SPE-05 | Fonctionnalités Avancées pour Carrosserie, Châssis & Soubassement 🚗 | 1 jour 🕒 |
| SPE-06 | Ingénierie du GMP : Techniques d'Automatisation Avancées 🏭 | 2 jours 🕒 |

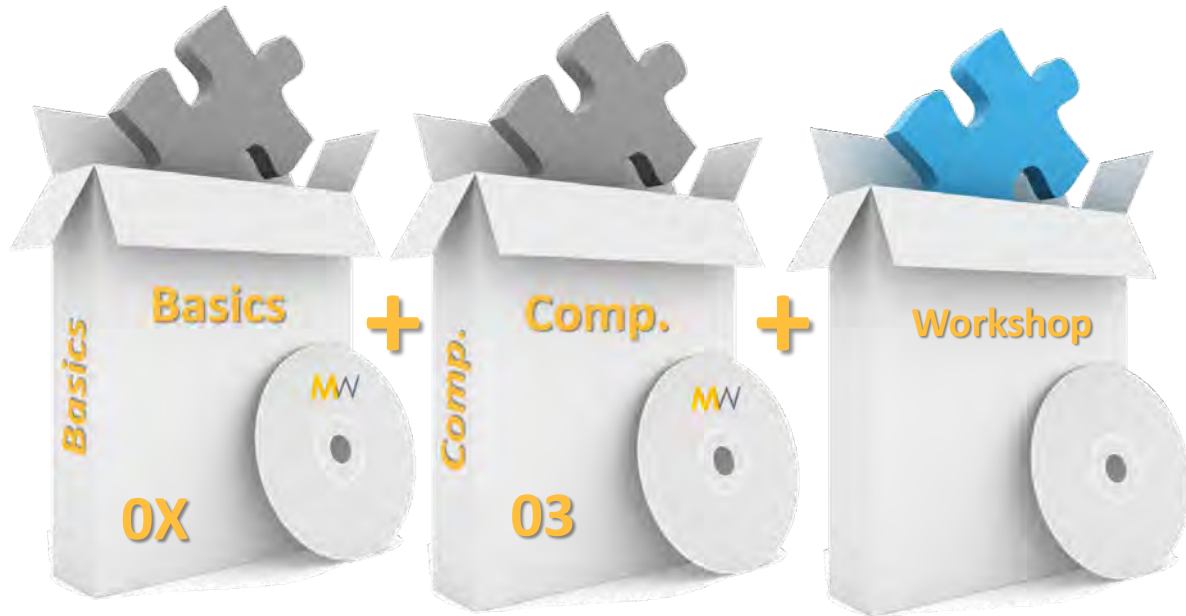
Fiches descriptives
des cours



Planifiées au calendrier

A planifier en fonction des demandes

Ce cours de formation est TOUT en un, commandez l'un de nos forfaits les plus vendus pour vous mettre à niveau sur DEP MeshWorks :



Meilleure Vente

BAS-0X
+
COMP-03
+
Customized workshop

Les fondamentaux de DEP MeshWorks
+
Accélération du workflow calcul : Techniques de Morphing
+
Un workshop personnalisé sur votre application!

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CALENDRIER

JANUARY

15	M	Week n°3 BAS-03 DEP MeshWorks Essentials: Comprehensive Meshing Techniques
16	T	
17	W	
18	T	
19	F	COMP-03 CAE Morphing

FEBRUARY

29	M	Week n°5
30	T	
31	W	
1	T	BAS-04H Transition to MeshWorks: HEXA Meshing
2	F	

MARCH

18	M	Week n°12
19	T	
20	W	BAS-04Q Transition to MeshWorks: QUAD Meshing
21	T	BAS-04T Transition to MeshWorks: TETRA Meshing
22	F	

JULY

1	M	Week n°27 BAS-03 DEP MeshWorks Essentials: Comprehensive Meshing Techniques	
2	T		
3	W		
4	T		
5	F		COMP-03 CAE Morphing
8	M	Week n°28	
9	T		
10	W		BAS-04Q Transition to MeshWorks: QUAD Meshing
11	T		BAS-04T Transition to MeshWorks: TETRA Meshing
12	F		

AUGUST

☀️
SUMMER BREAK

SEPTEMBER

ONLY ON REQUEST

APRIL

ONLY ON REQUEST

MAY

13	M	Week n°20	
14	T		
15	W		BAS-04H Transition to MeshWorks: HEXA Meshing
16	T		
17	F		
27	M	Week n°22 BAS-03 DEP MeshWorks Essentials: Comprehensive Meshing Techniques	
28	T		
29	W		
30	T		
31	F		COMP-03 CAE Morphing

JUNE

ONLY ON REQUEST

OCTOBER

7	M	Week n°41 BAS-03 DEP MeshWorks Essentials: Comprehensive Meshing Techniques	
8	T		
9	W		
10	T		
11	F		COMP-03 CAE Morphing
14	M	Week n°42	
15	T		
16	W		BAS-04H Transition to MeshWorks: HEXA Meshing
17	T		
18	F		

NOVEMBER

11	M	Week n°46 Armistice 1918
12	T	
13	W	BAS-04Q Transition to MeshWorks: QUAD Meshing
14	T	BAS-04T Transition to MeshWorks: TETRA Meshing
15	F	

DECEMBER

ONLY ON REQUEST

Last update : 01/30/2024



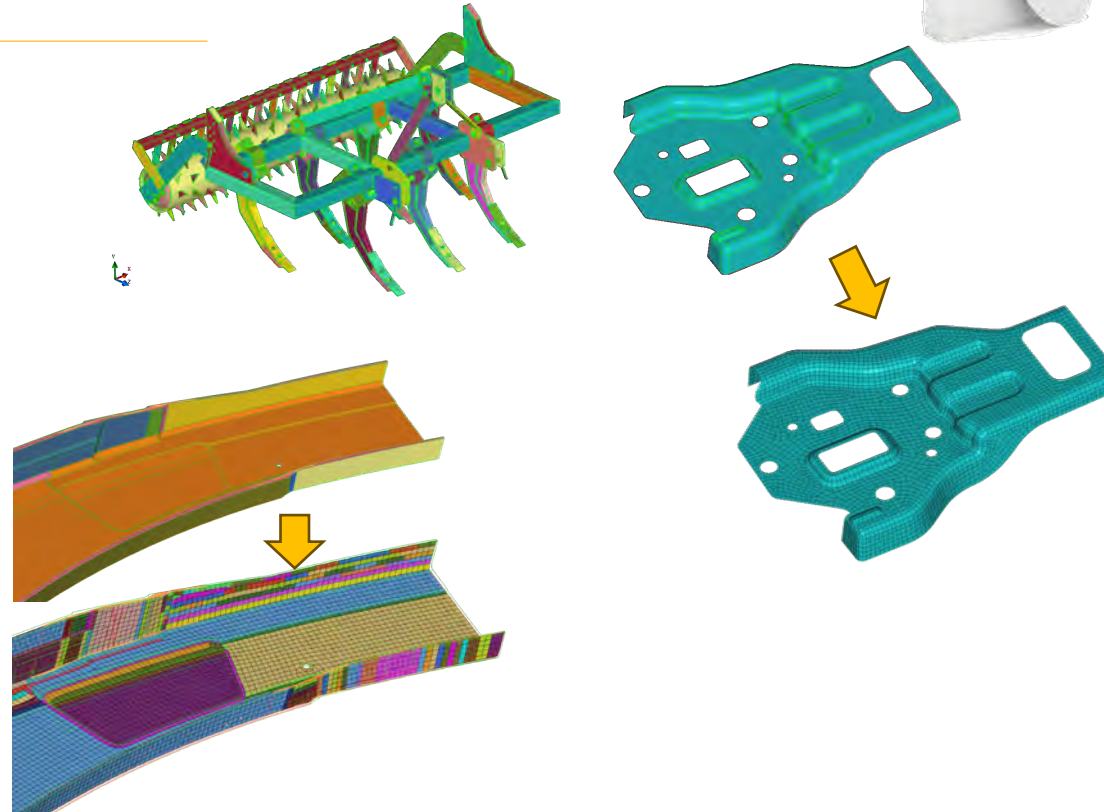
FICHES DESCRIPTIVES DES FORMATIONS

Consultez le programme !

- Chaque cours propose une procédure étape par étape élaborée par des experts, afin de vous donner les stratégies dont vous avez besoin pour réussir.
- Nos cours ne sont pas seulement une formation théorique, mais aussi l'application pratique des stratégies enseignées.
- Le programme de formation est amélioré chaque année sur la base de tous les retours d'expérience des anciens stagiaires.

Plan du cours

1. Software Exploration
2. Interactive Mesh Generation
3. Template-Driven Mesh Generation
4. Mesh Quality Excellence
5. Advanced QUAD Meshing Techniques



AUDIENCE CIBLE

- CAD / CAE engineers wishing to:
- start using DEP MeshWorks from scratch
 - learn how to do QUAD meshing.

PREREQUIS

Basic familiarity with CAE concepts and interest in Meshing.

DUREE

3 days (6 x 3.5 hours)

FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Equip trainees with a robust understanding of DEP MeshWorks, focusing on mastering QUAD meshing capabilities to enhance modeling efficiency.

OBJECTIFS PEDAGOGIQUES

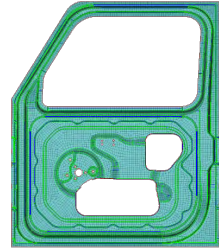
- ✓ **Interface Proficiency:** Gain proficiency in navigating the DEP MeshWorks interface and manipulating model views with confidence for optimal visualization and analysis.
- ✓ **Geometry Optimization:** Acquire the ability to meticulously clean and simplify both CAD and FE geometries, laying the groundwork for high-quality mesh generation.
- ✓ **Surface Meshing Techniques:** Develop hands-on skills to manually mesh surfaces with surface elements, ensuring a strong foundation in mesh creation.
- ✓ **Template Management:** Learn to design, implement, and manage custom mesh templates, leveraging automation to accelerate the meshing process without the need for constant user interaction.
- ✓ **Mesh Modification and Quality Control:** Become adept at interactively modifying meshes and employing advanced techniques to control and enhance mesh quality.
- ✓ **Critical Thinking in Mesh Workflow:** Cultivate the ability to critically assess and choose the appropriate meshing strategies for varied project requirements
- ✓ **QUAD Mesh Excellence:** Achieve the skill to generate full quad meshes, optimizing mesh flow and topology to meet the rigorous demands of complex simulations.

BAS-01Q DEP MeshWorks Essentials with QUAD Meshing Focus

Plan détaillé du cours

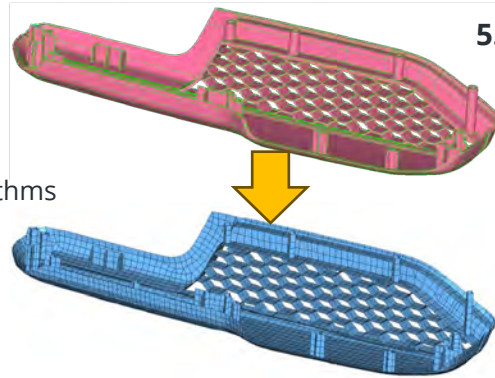
1. Software Exploration

- ✓ Global presentation
- ✓ Reminder CAE Fundamentals
- ✓ Why DEP MeshWorks
- ✓ Some real-world applications
- ✓ Intuitive Interface overview
- ✓ Software hands-on



2. Interactive Mesh Generation

- ✓ CAD Cleaning & Simplification
- ✓ CAD Modification
- ✓ Various meshing engines & Algorithms
- ✓ Mesh/FE Modifications



3. Template-Driven Mesh Generation

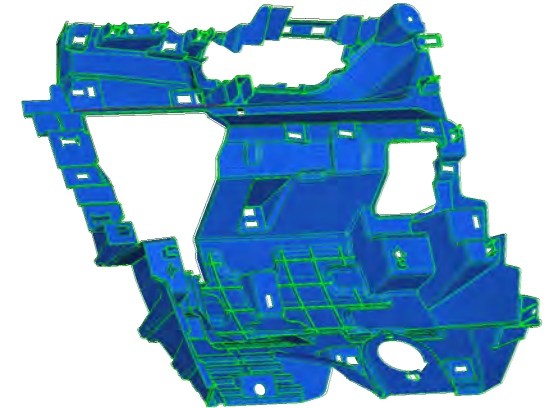
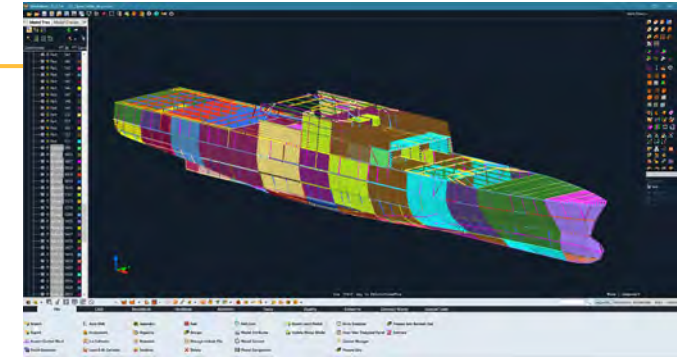
- ✓ Templates creation
- ✓ Templates management
- ✓ Best Practices

4. Mesh Quality Excellence

- ✓ Quality checking & visualization tools
- ✓ Auto Quality Correction & Improvement
- ✓ Quick Interactive Quality Correction
- ✓ Thickness Assignment
- ✓ Normal alignment

5. Advanced QUAD Meshing Techniques

- ✓ QUAD Workflow: step-by-step approach
- ✓ Interactive remeshing
- ✓ Professional Tips

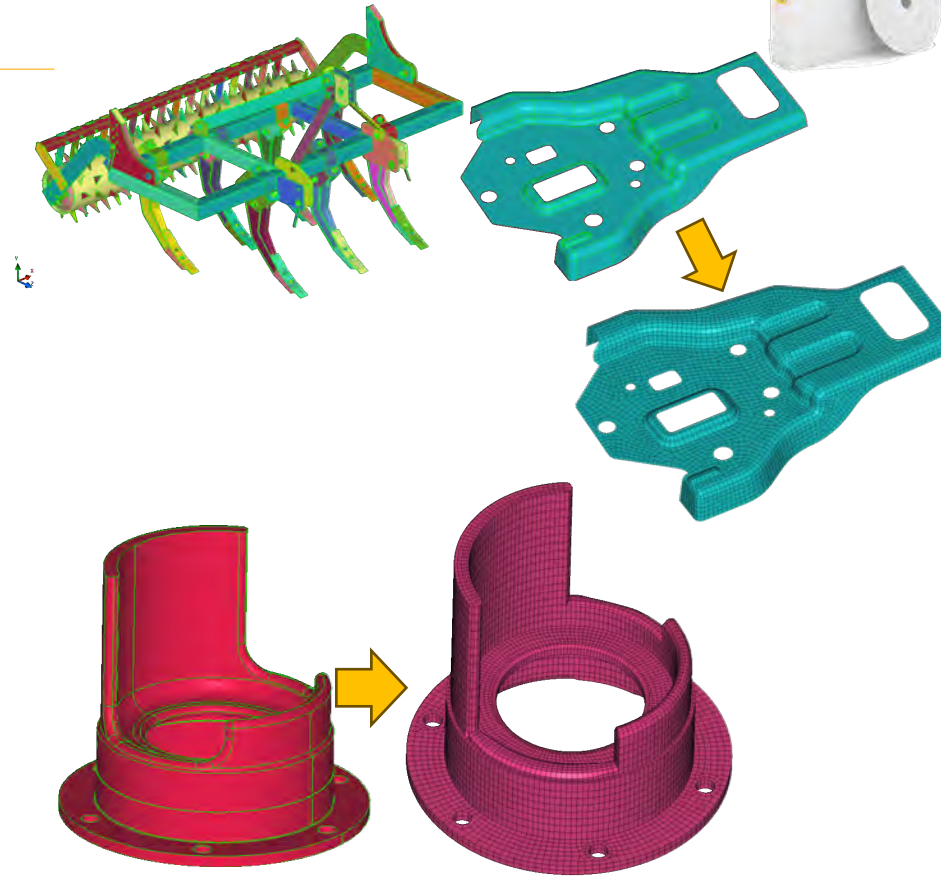


The key concepts of the training are illustrated with practical exercises.

- Embark on a journey to discover the integral aspects of QUAD meshing in 'DEP MeshWorks Essentials with QUAD Meshing Focus.'
- This comprehensive course provides a deep dive into the intuitive world of DEP MeshWorks, combining a thorough overview of the software with practical hands-on experience. Engage in learning the core principles of CAD cleaning, simplification, and modification, and explore various surface meshing engines and algorithms.
- You'll gain expertise in template-driven mesh generation and uncover the best practices for ensuring mesh quality excellence. The course culminates in advanced QUAD meshing techniques, where you'll learn step-by-step workflows and receive professional tips for mastering QUAD meshing.
- Designed for engineers focused on precision and efficiency, this course is a gateway to mastering QUAD meshing in DEP MeshWorks.

Plan du cours

1. Exploration du logiciel
2. Génération de maillage interactif
3. Qualité de maillage
4. Techniques avancées de maillage HEXA



AUDIENCE CIBLE

Ingénieurs CAO / Calcul souhaitant :

- débiter avec DEP MeshWorks à partir de zéro
- apprendre à réaliser du maillage HEXA.



PREREQUIS

Bases en simulation numérique



DUREE

3 jours (6 x 3.5 heures)



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Se former à une compréhension approfondie de DEP MeshWorks, en se concentrant sur la maîtrise des capacités de maillage HEXA pour améliorer l'efficacité de la modélisation

OBJECTIFS PEDAGOGIQUES

- ✓ **Maîtrise de l'interface:** Développer une maîtrise de la navigation dans l'interface DEP MeshWorks et de la manipulation des vues de modèles pour une visualisation et une analyse optimales.
- ✓ **Optimisation de la géométrie:** Acquérir la capacité de nettoyer et de simplifier méticuleusement les géométries CAD et FE, établissant ainsi les bases pour la génération de maillages de haute qualité.
- ✓ **Techniques de maillage de surface:** Développer des compétences pratiques pour mailler manuellement les surfaces avec des éléments de surface, assurant une base solide dans la création de maillage.
- ✓ **Modification de maillage et contrôle de qualité:** Devenir compétent dans la modification interactive des maillages et l'utilisation de techniques avancées pour contrôler et améliorer la qualité du maillage.
- ✓ **Pensée critique dans le flux de maillage:** Cultiver la capacité d'évaluer de manière critique et de choisir les stratégies de maillage appropriées en fonction des exigences variées des projets.
- ✓ **Excellence en maillage HEXA:** Acquérir la compétence pour générer des maillages hexa complets, optimisant le flux et la topologie du maillage pour répondre aux exigences rigoureuses des simulations complexes.

BAS-01H Les Fondamentaux de DEP MeshWorks: Focus sur le maillage HEXA

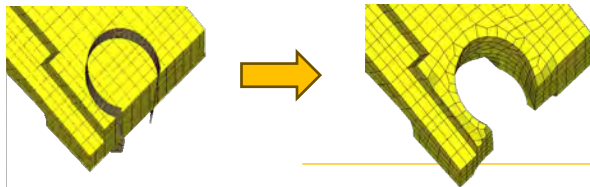
Plan détaillé du cours

1. Exploration du logiciel

- ✓ Présentation globale
- ✓ Rappel des fondamentaux CAE
- ✓ Pourquoi DEP MeshWorks
- ✓ Exemples d'applications
- ✓ Aperçu de l'interface intuitive
- ✓ Pratique directe du logiciel

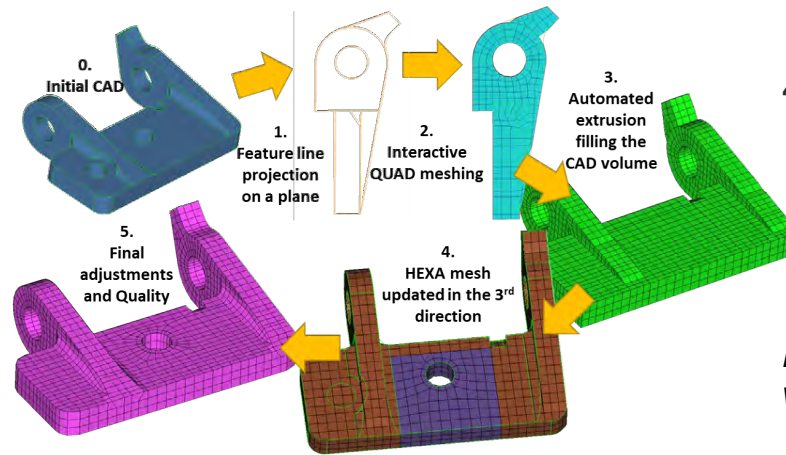
2. Génération de maillage interactif

- ✓ Nettoyage et Simplification CAO
- ✓ Modification CAO
- ✓ Divers Moteurs de Maillage et Algorithmes
- ✓ Modifications de Maillage



3. Qualité de maillage

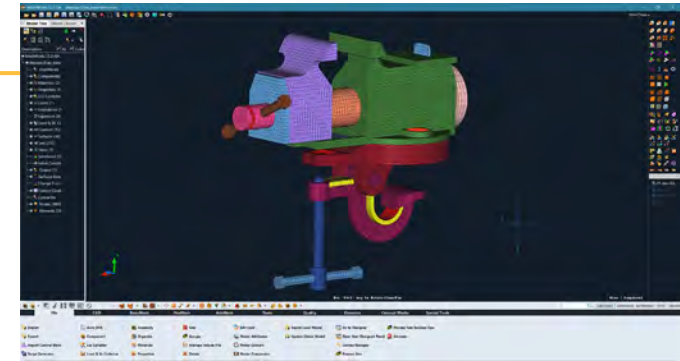
- ✓ Outils de contrôle de Qualité et de Visualisation
- ✓ Correction et amélioration automatique de la Qualité
- ✓ Correction rapide et interactive de la Qualité
- ✓ Alignement des normales



4. Techniques avancées de maillage HEXA

- ✓ Stratégies de maillage HEXA
- ✓ Outils de génération de maillage 3D extrudé
- ✓ Flux de travail de maillage HEXA semi-automatisé
- ✓ Modification interactive et conseils pratiques

Les concepts clés de la formation sont illustrés via des exercices pratiques

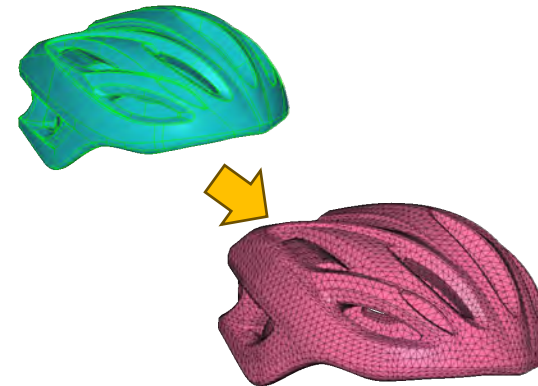
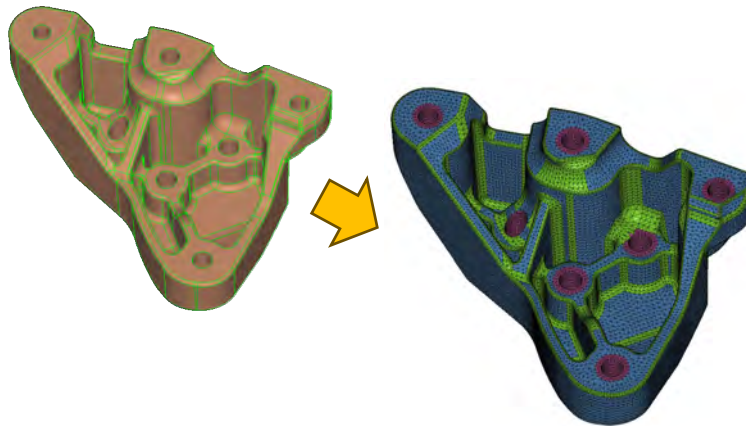
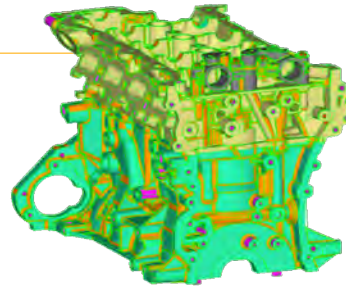


- Embarquez dans un voyage à la découverte des aspects essentiels du maillage HEXA avec le cours 'Les fondamentaux de DEP MeshWorks: Focus sur le maillage HEXA'. Ce cours complet offre une immersion profonde dans l'univers intuitif de DEP MeshWorks, combinant une vue d'ensemble approfondie du logiciel à une expérience pratique. Apprenez les principes fondamentaux du nettoyage, de la simplification et de la modification de CAO, et explorez différents moteurs et algorithmes de maillage de surface.
- Vous développerez une expertise dans la génération de maillage guidée par des modèles et découvrirez les meilleures pratiques pour garantir l'excellence de la qualité du maillage. Le cours se termine par des techniques avancées de maillage HEXA, où vous apprendrez le 'workflow' étape par étape et recevrez des conseils professionnels pour maîtriser le maillage HEXA.
- Conçu pour les ingénieurs axés sur la précision et l'efficacité, ce cours est votre porte d'entrée pour maîtriser le maillage HEXA dans DEP MeshWorks.



Plan du cours

1. Software Exploration
2. Interactive Mesh Generation
3. Template-Driven Mesh Generation
4. Mesh Quality Excellence
5. Advanced TETRA Meshing Techniques



AUDIENCE CIBLE

- CAD / CAE engineers wishing to:
- start using DEP MeshWorks from scratch
 - learn how to do TETRA meshing.



PREREQUIS

Basic familiarity with CAE concepts and interest in Meshing.



DUREE

3 days (6 x 3.5 hours)



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Equip trainees with a robust understanding of DEP MeshWorks, focusing on mastering TETRA meshing capabilities to enhance modeling efficiency.

OBJECTIFS PEDAGOGIQUES

- ✓ **Interface Proficiency:** Gain proficiency in navigating the DEP MeshWorks interface and manipulating model views with confidence for optimal visualization and analysis.
- ✓ **Geometry Optimization:** Acquire the ability to meticulously clean and simplify both CAD and FE geometries, laying the groundwork for high-quality mesh generation.
- ✓ **Surface Meshing Techniques:** Develop hands-on skills to manually mesh surfaces with surface elements, ensuring a strong foundation in mesh creation.
- ✓ **Template Management:** Learn to design, implement, and manage custom mesh templates, leveraging automation to accelerate the meshing process without the need for constant user interaction.
- ✓ **Mesh Modification and Quality Control:** Become adept at interactively modifying meshes and employing advanced techniques to control and enhance mesh quality.
- ✓ **Critical Thinking in Mesh Workflow:** Cultivate the ability to critically assess and choose the appropriate meshing strategies for varied project requirements
- ✓ **TETRA Mesh Excellence:** Achieve the skill to generate full tetra meshes, optimizing mesh flow and topology to meet the rigorous demands of complex simulations.

BAS-01T DEP MeshWorks Essentials with TETRA Meshing Focus

Plan détaillé du cours

1. Software Exploration

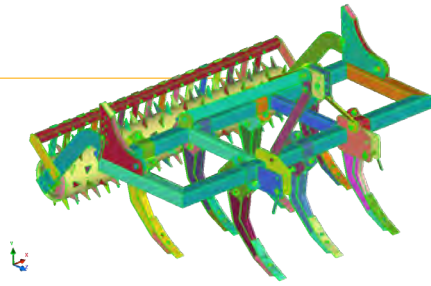
- ✓ Global presentation
- ✓ Reminder CAE Fundamentals
- ✓ Why DEP MeshWorks
- ✓ Some real-world applications
- ✓ Intuitive Interface overview
- ✓ Software hands-on

2. Interactive Mesh Generation

- ✓ CAD Cleaning & Simplification
- ✓ CAD Modification
- ✓ Various meshing engines & Algorithms
- ✓ Mesh/FE Modifications

3. Template-Driven Mesh Generation

- ✓ Templates creation
- ✓ Templates management
- ✓ Best Practices

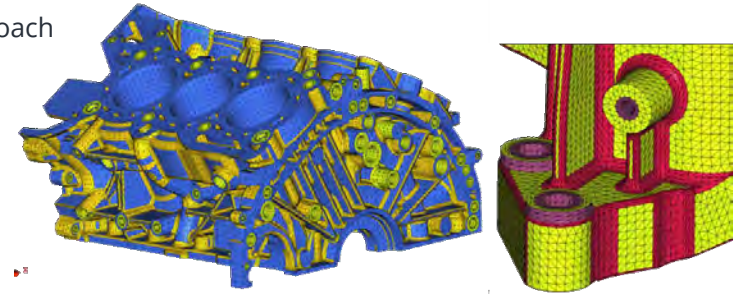
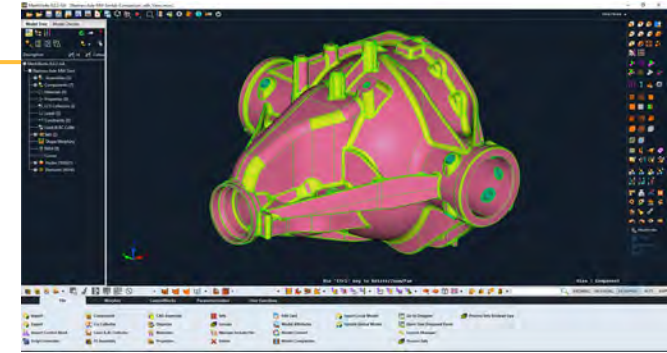
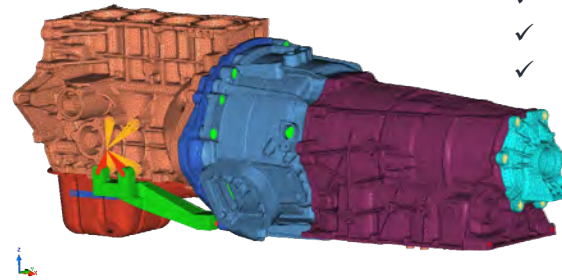


4. Mesh Quality Excellence

- ✓ Quality checking & visualization tools
- ✓ Auto Quality Correction & Improvement
- ✓ Quick Interactive Quality Correction
- ✓ Thickness assignment
- ✓ Normal alignment

5. Advanced TETRA Meshing Techniques

- ✓ TETRA Workflow: step-by-step approach
- ✓ Interactive remeshing
- ✓ Professional Tips



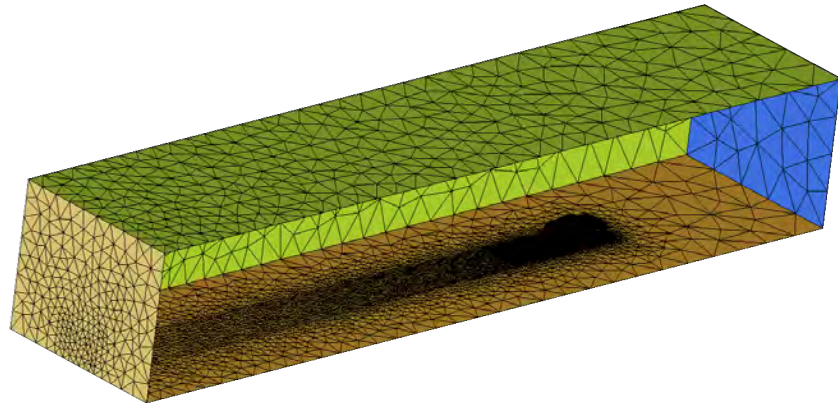
The key concepts of the training are illustrated with practical exercises.

- Embark on a journey to discover the integral aspects of TETRA meshing in 'DEP MeshWorks Essentials with TETRA Meshing Focus.'
- This comprehensive course provides a deep dive into the intuitive world of DEP MeshWorks, combining a thorough overview of the software with practical hands-on experience. Engage in learning the core principles of CAD cleaning, simplification, and modification, and explore various surface meshing engines and algorithms.
- You'll gain expertise in template-driven mesh generation and uncover the best practices for ensuring mesh quality excellence. The course culminates in advanced TETRA meshing techniques, where you'll learn step-by-step workflows and receive professional tips for mastering TETRA meshing.
- Designed for engineers focused on precision and efficiency, this course is a gateway to mastering TETRA meshing in DEP MeshWorks.



Plan du cours

1. Software Exploration
2. Interactive Mesh Generation
3. Template-Driven Mesh Generation
4. Mesh Quality Excellence
5. Advanced Surface Meshing Techniques



OBJECTIF PRINCIPAL

- ✓ Equip trainees with a robust understanding of DEP MeshWorks, focusing on mastering surface meshing capabilities for CFD applications.

OBJECTIFS PEDAGOGIQUES

- ✓ **Interface Proficiency:** Gain proficiency in navigating the DEP MeshWorks interface and manipulating model views with confidence for optimal visualization and analysis.
- ✓ **Geometry Optimization:** Acquire the ability to meticulously clean and simplify both CAD and FE geometries, laying the groundwork for high-quality mesh generation.
- ✓ **Surface Meshing Techniques:** Develop hands-on skills to manually mesh surfaces with surface elements, ensuring a strong foundation in mesh creation.
- ✓ **Template Management:** Learn to design, implement, and manage custom mesh templates, leveraging automation to accelerate the meshing process without the need for constant user interaction.
- ✓ **Mesh Modification and Quality Control:** Become adept at interactively modifying meshes and employing advanced techniques to control and enhance mesh quality.
- ✓ **Critical Thinking in Mesh Workflow:** Cultivate the ability to critically assess and choose the appropriate meshing strategies for varied project requirements.
- ✓ **Wetted Surface Mesh Excellence:** Achieve the skill to generate wetted surface meshes, optimizing topology to meet the rigorous demands of complex CFD simulations.



AUDIENCE CIBLE

- CAD / CAE engineers wishing to:
- start using DEP MeshWorks from scratch
 - learn how to do surface meshing for CFD.



PREREQUIS

Basic familiarity with CAE concepts and interest in Meshing.



DUREE

3 days (6 x 3.5 hours)



FORMATEURS



BAS-02 DEP MeshWorks Essentials with CFD Meshing Focus

Plan détaillé du cours

1. Software Exploration

- ✓ Global presentation
- ✓ Reminder CAE Fundamentals
- ✓ Why DEP MeshWorks
- ✓ Some real-world applications
- ✓ Intuitive Interface overview
- ✓ Software hands-on

2. Interactive Mesh Generation

- ✓ CAD Cleaning & Simplification
- ✓ CAD Modification
- ✓ Various meshing engines & Algorithms
- ✓ Mesh/FE Modifications

3. Template-Driven Mesh Generation

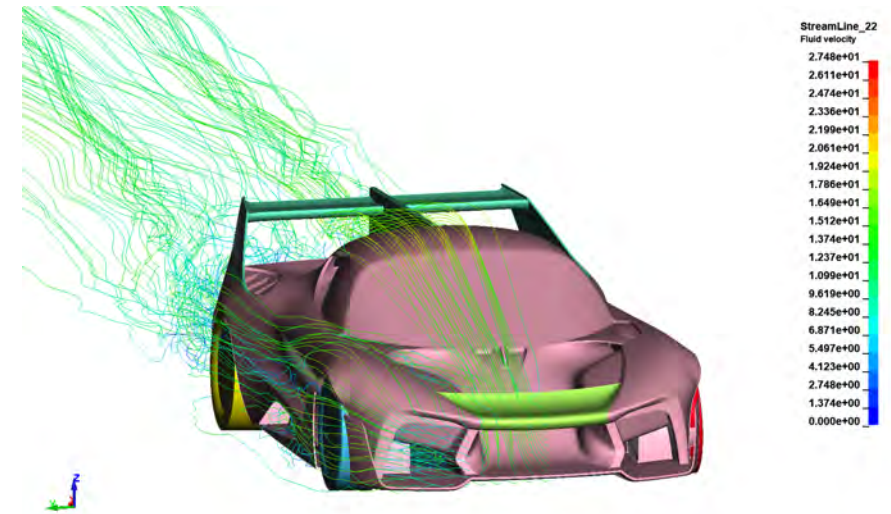
- ✓ Templates creation
- ✓ Templates management
- ✓ Best Practices

4. Mesh Quality Excellence

- ✓ Quality checking & visualization tools
- ✓ Auto Quality Correction & Improvement
- ✓ Quick Interactive Quality Correction
- ✓ Thickness Assignment
- ✓ Normal alignment

5. Advanced Surface Meshing Techniques

- ✓ CFD Workflow: step-by-step approach
- ✓ Wetted surface creation
- ✓ Professional Tips



The key concepts of the training are illustrated with practical exercises.

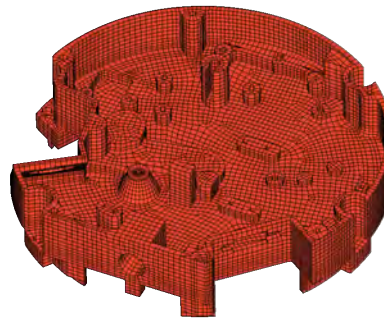
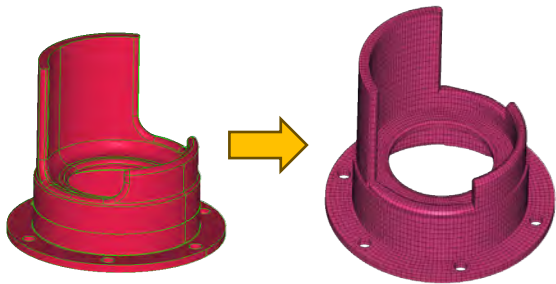
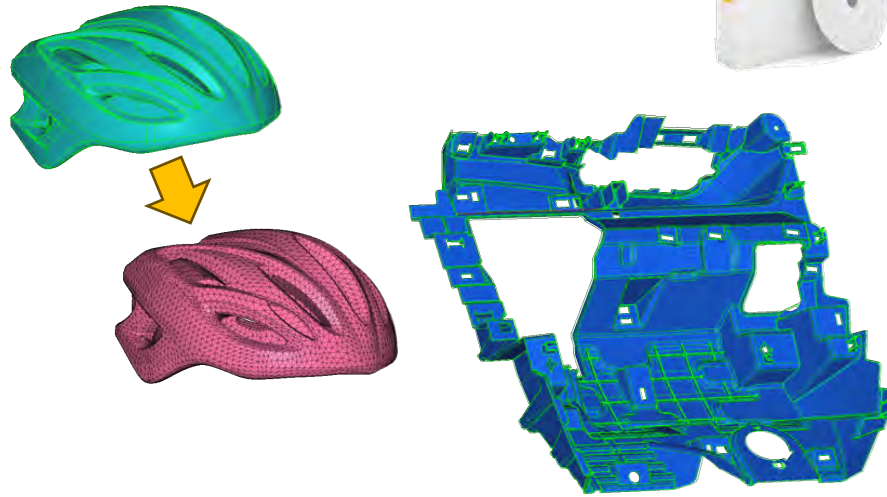
- Embark on a journey to discover the integral aspects of surface meshing in 'DEP MeshWorks Essentials with CFD Meshing Focus.'
- This comprehensive course provides a deep dive into the intuitive world of DEP MeshWorks, combining a thorough overview of the software with practical hands-on experience. Engage in learning the core principles of CAD cleaning, simplification, and modification, and explore various surface meshing engines and algorithms.
- You'll gain expertise in template-driven mesh generation and uncover the best practices for ensuring mesh quality excellence. The course culminates in advanced Surface meshing techniques, where you'll learn step-by-step workflows and receive professional tips for mastering CFD wetted surface meshing.
- Designed for engineers focused on precision and efficiency, this course is a gateway to mastering CFD meshing in DEP MeshWorks.

BAS-03 DEP MeshWorks Essentials: Comprehensive Meshing Techniques



Plan du cours

1. Software Exploration
2. Interactive Mesh Generation
3. Template-Driven Mesh Generation
4. Mesh Quality Excellence
5. Advanced QUAD Meshing Techniques
6. Advanced HEXA Meshing Techniques
7. Advanced TETRA Meshing Techniques



AUDIENCE CIBLE

- CAD / CAE engineers wishing to:
- start using DEP MeshWorks from scratch
 - learn how to do QUAD, HEXA & TETRA meshing.



PREREQUIS

Basic familiarity with CAE concepts and interest in Meshing.



DUREE

4 days (8 x 3.5 hours)



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Equip trainees with a robust understanding of DEP MeshWorks, focusing on mastering QUAD, HEXA & TETRA meshing capabilities to enhance modeling efficiency.

OBJECTIFS PEDAGOGIQUES

- ✓ **Interface Proficiency:** Gain proficiency in navigating the DEP MeshWorks interface and manipulating model views with confidence for optimal visualization and analysis.
- ✓ **Geometry Optimization:** Acquire the ability to meticulously clean and simplify both CAD and FE geometries, laying the groundwork for high-quality mesh generation.
- ✓ **Surface Meshing Techniques:** Develop hands-on skills to manually mesh surfaces with surface elements, ensuring a strong foundation in mesh creation.
- ✓ **Template Management:** Learn to design, implement, and manage custom mesh templates, leveraging automation to accelerate the meshing process without the need for constant user interaction.
- ✓ **Mesh Modification and Quality Control:** Become adept at interactively modifying meshes and employing advanced techniques to control and enhance mesh quality.
- ✓ **Critical Thinking in Mesh Workflow:** Cultivate the ability to critically assess and choose the appropriate meshing strategies for varied project requirements
- ✓ **Mesh Excellence:** Achieve the skill to generate full structural type meshes, optimizing mesh flow and topology to meet the rigorous demands of complex simulations.

BAS-03 DEP MeshWorks Essentials: Comprehensive Meshing Techniques

Plan détaillé du cours

1. Software Exploration

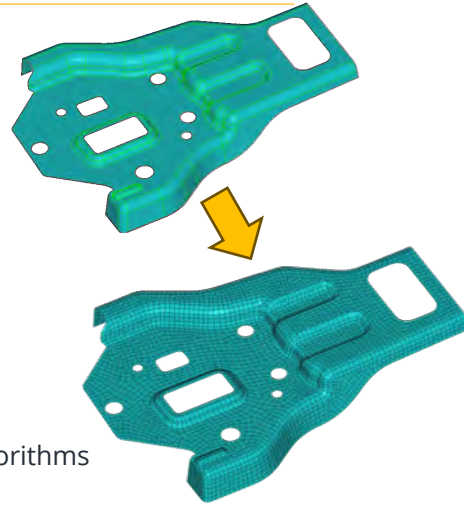
- ✓ Global presentation
- ✓ Reminder CAE Fundamentals
- ✓ Why DEP MeshWorks
- ✓ Some real-world applications
- ✓ Intuitive Interface overview
- ✓ Software hands-on

2. Interactive Mesh Generation

- ✓ CAD Cleaning & Simplification
- ✓ CAD Modification
- ✓ Various meshing engines & Algorithms
- ✓ Mesh/FE Modifications

3. Template-Driven Mesh Generation

- ✓ Templates creation
- ✓ Templates management
- ✓ Best Practices



4. Mesh Quality Excellence

- ✓ Quality checking & visualization tools
- ✓ Auto Quality Correction & Improvement
- ✓ Quick Interactive Quality Correction
- ✓ Thickness Assignment
- ✓ Normal alignment

5. Advanced QUAD Meshing Techniques

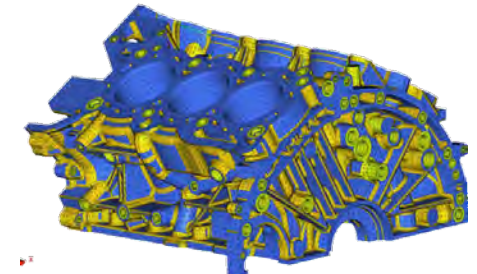
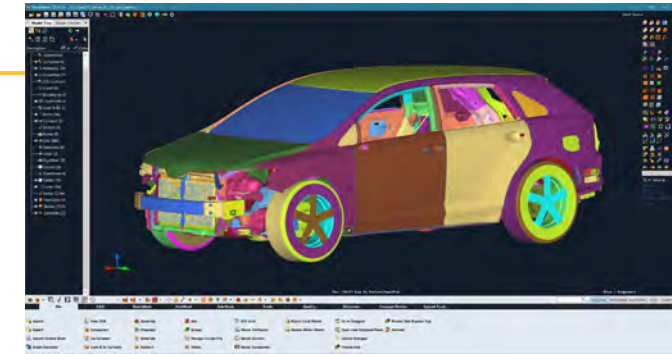
- ✓ QUAD Workflow: step-by-step approach
- ✓ Interactive remeshing
- ✓ Professional Tips

6. Advanced HEXA Meshing Techniques

- ✓ HEXA meshing strategies
- ✓ Extruded 3D Mesh Generation Tools
- ✓ Semi-automated HEXA Meshing Workflow
- ✓ Automated Tools for Update
- ✓ Interactive Modification & Useful Tips

7. Advanced TETRA Meshing Techniques

- ✓ TETRA Workflow: step-by-step approach
- ✓ Interactive remeshing
- ✓ Professional Tips

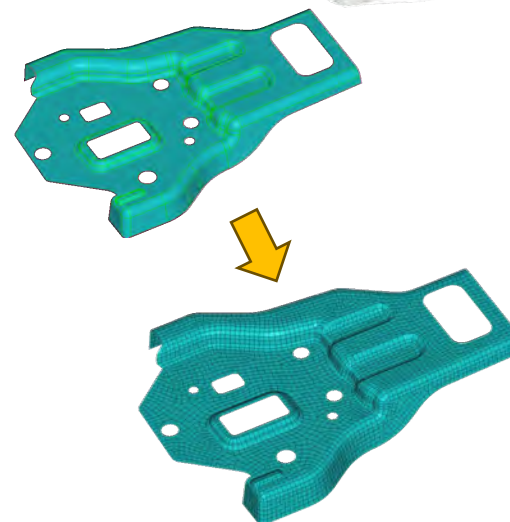
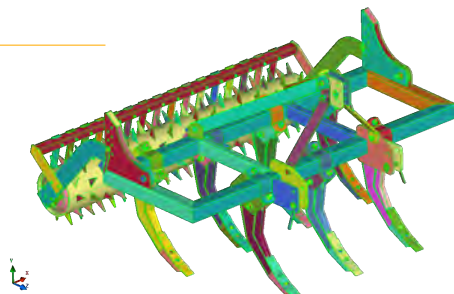
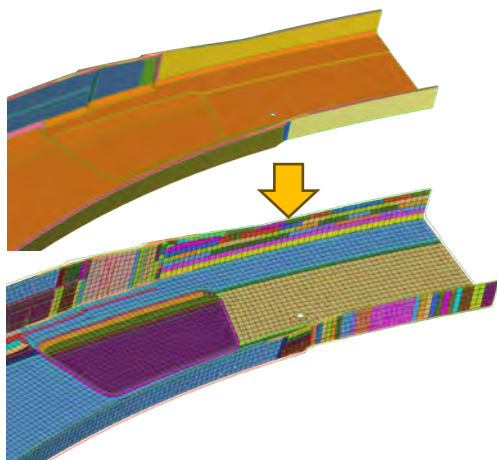


The key concepts of the training are illustrated with practical exercises.

- Embark on a journey to discover the integral aspects of meshing for structural parts in 'DEP MeshWorks Essential: Comprehensive Meshing Techniques.'
- This comprehensive course provides a deep dive into the intuitive world of DEP MeshWorks, combining a thorough overview of the software with practical hands-on experience. Engage in learning the core principles of CAD cleaning, simplification, and modification, and explore various surface meshing engines and algorithms.
- You'll gain expertise in template-driven mesh generation and uncover the best practices for ensuring mesh quality excellence. The course culminates in 3 different advanced parts: QUAD meshing techniques, HEXA meshing techniques and TETRA meshing techniques. In each of those modules, you'll learn step-by-step workflows and receive professional tips for mastering meshing.
- Designed for engineers focused on precision and efficiency, this course is a gateway to mastering meshing in DEP MeshWorks.

Plan du cours

1. Accelerated Software Introduction
2. Essential Mesh Techniques
3. Advanced QUAD Meshing



 **AUDIENCE CIBLE**

CAD / CAE engineers wishing to:

- learn how to do QUAD meshing using DEP MeshWorks

 **PREREQUIS**

Operational proficiency in CAD cleaning and meshing with HyperMesh experience.

 **DUREE**

1 day (2 x 3.5 hours)

 **FORMATEURS**



OBJECTIF PRINCIPAL

- ✓ Equip trainees with the skills to seamlessly transition their meshing expertise to DEP MeshWorks, emphasizing a swift mastery of QUAD meshing capabilities.

OBJECTIFS PEDAGOGIQUES

- ✓ **Seamless Transition to DEP MeshWorks:** Acquire the ability to efficiently transition existing meshing skills to DEP MeshWorks, with a focus on understanding its unique interface and functionalities.
- ✓ **Advanced Meshing Techniques Adaptation:** Master the adaptation of advanced surface and QUAD meshing techniques to DEP MeshWorks' environment, ensuring a smooth transfer of expertise.
- ✓ **Optimized Geometry Handling in DEP MeshWorks:** Learn to effectively modify geometries within DEP MeshWorks using CAD, FE or an hybrid approach, leveraging prior experience for quick adaptation to the new platform.

BAS-04Q Proficient Transition to DEP MeshWorks: Accelerated QUAD Meshing

Plan détaillé du cours

1. Accelerated Software Introduction

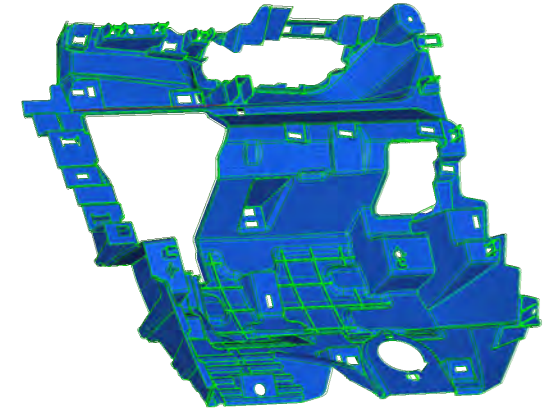
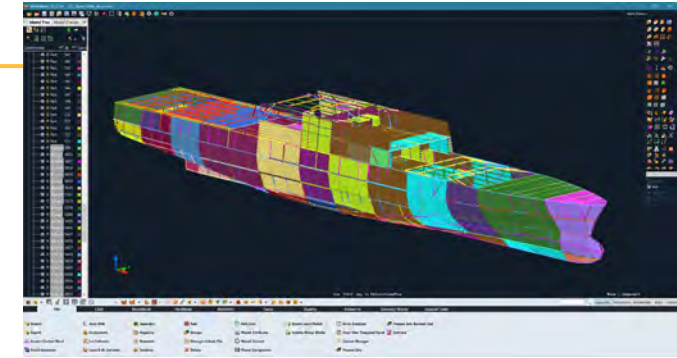
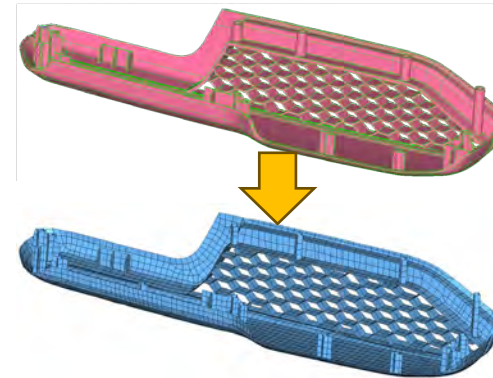
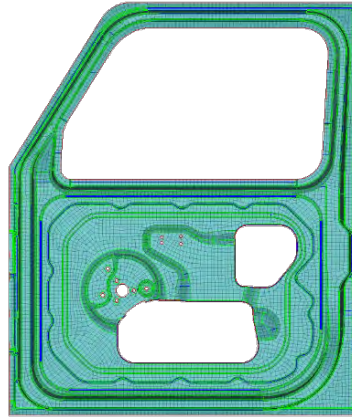
- ✓ Overview of DEP MeshWorks
- ✓ Intuitive Interface overview
- ✓ Hands-on Quick Start

2. Essential Mesh Techniques

- ✓ Essential CAD Tools
- ✓ Key meshing engines & Algorithms
- ✓ Mesh/FE Modifications
- ✓ Rapid Creation and Management of Templates
- ✓ Key Tools for Quality Checking & Visualization

3. Advanced QUAD Meshing

- ✓ Condensed QUAD Meshing Workflow
- ✓ Interactive remeshing

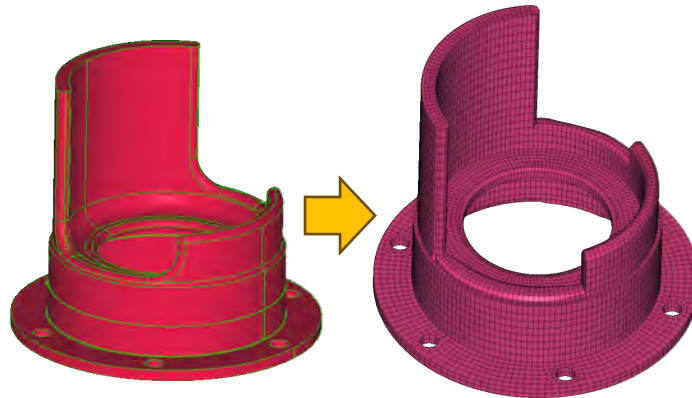
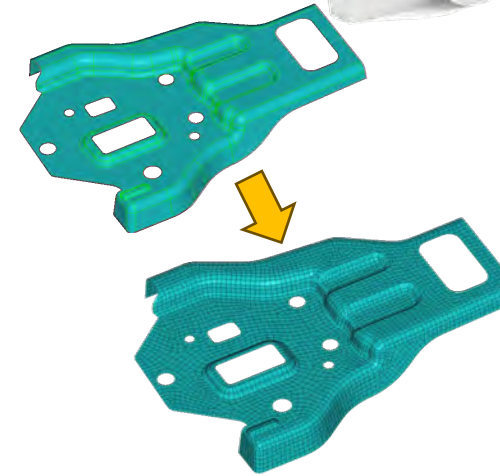
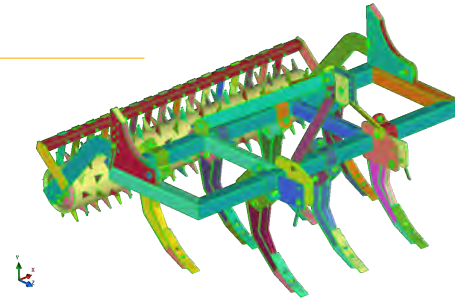


The key concepts of the training are illustrated with practical exercises.

- Fast-track your QUAD meshing expertise in DEP MeshWorks with our 'Proficient Transition to DEP MeshWorks: Accelerated QUAD Meshing' course. Tailored for experienced HyperMesh users, this intensive one-day course distills the essentials of QUAD meshing, combining a focused overview of DEP MeshWorks with practical, hands-on experience.
- Streamlined Learning: Dive into the core aspects of CAD cleaning, meshing and quality, specifically streamlined for those already familiar with meshing concepts.
- Advanced QUAD Meshing Skills: The course culminates with a condensed QUAD Meshing workflow, providing insights tailored for quick mastery.
- Designed specifically for professionals transitioning from HyperMesh, this course offers an accelerated pathway to mastering QUAD meshing in DEP MeshWorks, ensuring precision and efficiency in your meshing workflow.

Plan du cours

1. Accelerated Software Introduction
2. Essential Mesh Techniques
3. Advanced HEXA Meshing Techniques



 **AUDIENCE CIBLE**

CAD / CAE engineers wishing to:

- learn how to do HEXA meshing using DEP MeshWorks

 **PREREQUIS**

Operational proficiency in CAD cleaning and meshing with HyperMesh experience.

 **DUREE**

2 days (4 x 3.5 hours)

 **FORMATEURS**



OBJECTIF PRINCIPAL

- ✓ Equip trainees with the skills to seamlessly transition their meshing expertise to DEP MeshWorks, emphasizing a swift mastery of HEXA meshing capabilities.

OBJECTIFS PEDAGOGIQUES

- ✓ **Seamless Transition to DEP MeshWorks:** Acquire the ability to efficiently transition existing meshing skills to DEP MeshWorks, with a focus on understanding its unique interface and functionalities.
- ✓ **Advanced Meshing Techniques Adaptation:** Master the adaptation of advanced surface and HEXA meshing techniques to DEP MeshWorks' environment, ensuring a smooth transfer of expertise.
- ✓ **Optimized Geometry Handling in DEP MeshWorks:** Learn to effectively modify geometries within DEP MeshWorks using CAD, FE or an hybrid approach, leveraging prior experience for quick adaptation to the new platform.

BAS-04Q Proficient Transition to DEP MeshWorks: Accelerated HEXA Meshing

Plan détaillé du cours

1. Accelerated Software Introduction

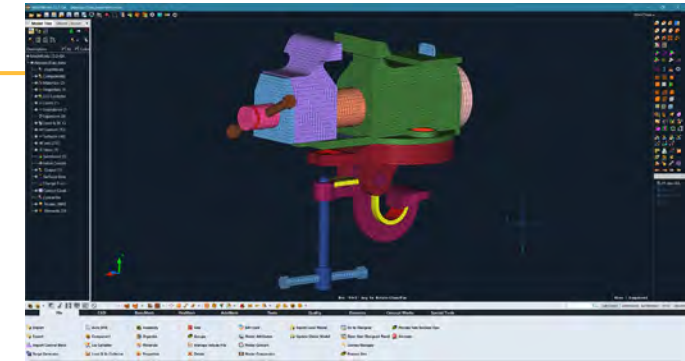
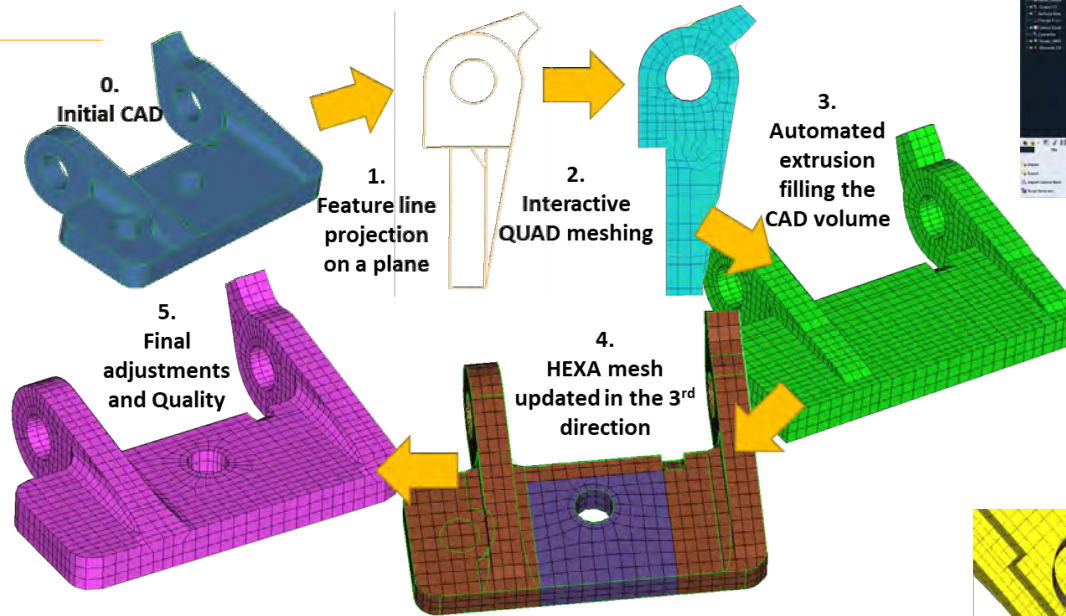
- ✓ Overview of DEP MeshWorks
- ✓ Intuitive Interface overview
- ✓ Hands-on Quick Start

2. Essential Mesh Techniques

- ✓ Essential CAD Tools
- ✓ Key meshing engines & Algorithms
- ✓ Mesh/FE Modifications
- ✓ Key Tools for Quality Checking & Visualization

3. Advanced HEXA Meshing Techniques

- ✓ HEXA meshing strategies
- ✓ Extruded 3D Mesh Generation Tools
- ✓ Semi-automated HEXA Meshing Workflow
- ✓ Automated Tools for Update
- ✓ Interactive Modification & Useful Tips



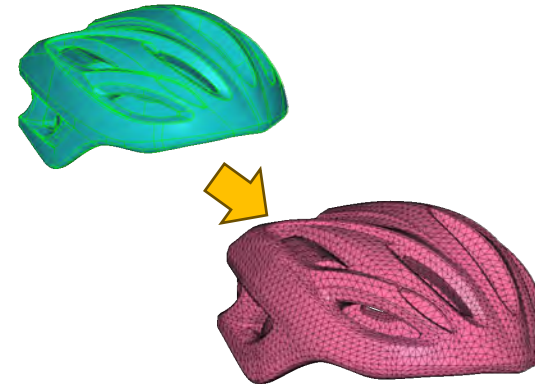
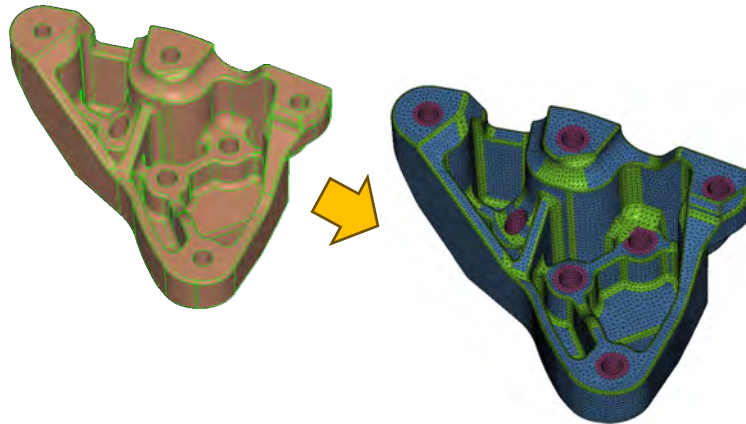
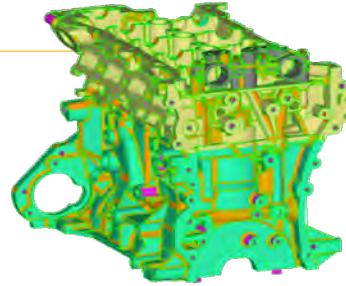
The key concepts of the training are illustrated with practical exercises.

- Fast-track your HEXA meshing expertise in DEP MeshWorks with our 'Proficient Transition to DEP MeshWorks: Accelerated HEXA Meshing' course. Tailored for experienced HyperMesh users, this intensive one-day course distills the essentials of HEXA meshing, combining a focused overview of DEP MeshWorks with practical, hands-on experience.
- Streamlined Learning: Dive into the core aspects of CAD cleaning, meshing and quality, specifically streamlined for those already familiar with meshing concepts.
- Advanced HEXA Meshing Skills: The course culminates with an advanced HEXA Meshing workflow, providing step-by-step procedure and insights tailored for quick mastery of the innovative approach given by DEP MeshWorks.
- Designed specifically for professionals transitioning from HyperMesh, this course offers an accelerated pathway to mastering HEXA meshing in DEP MeshWorks, ensuring precision and efficiency in your meshing workflow.



Plan du cours

1. Accelerated Software Introduction
2. Essential Mesh Techniques
3. Advanced TETRA Meshing



AUDIENCE CIBLE

CAD / CAE engineers wishing to:

- learn how to do TETRA meshing using DEP MeshWorks



PREREQUIS

Operational proficiency in CAD cleaning and meshing with HyperMesh experience.



DUREE

1 day (2 x 3.5 hours)



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Equip trainees with the skills to seamlessly transition their meshing expertise to DEP MeshWorks, emphasizing a swift mastery of TETRA meshing capabilities.

OBJECTIFS PEDAGOGIQUES

- ✓ **Seamless Transition to DEP MeshWorks:** Acquire the ability to efficiently transition existing meshing skills to DEP MeshWorks, with a focus on understanding its unique interface and functionalities.
- ✓ **Advanced Meshing Techniques Adaptation:** Master the adaptation of advanced surface and TETRA meshing techniques to DEP MeshWorks' environment, ensuring a smooth transfer of expertise.
- ✓ **Optimized Geometry Handling in DEP MeshWorks:** Learn to effectively modify geometries within DEP MeshWorks using CAD, FE or an hybrid approach, leveraging prior experience for quick adaptation to the new platform.

BAS-04T Proficient Transition to DEP MeshWorks: Accelerated TETRA Meshing

Plan détaillé du cours

1. Accelerated Software Introduction

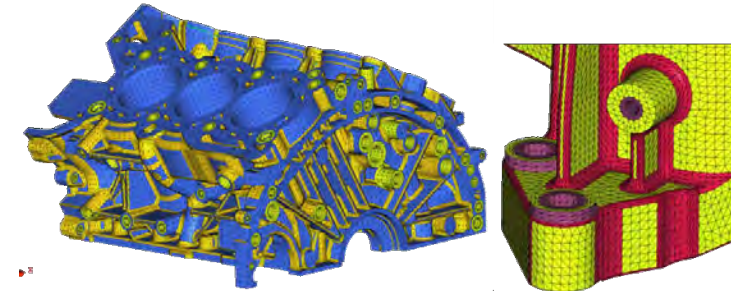
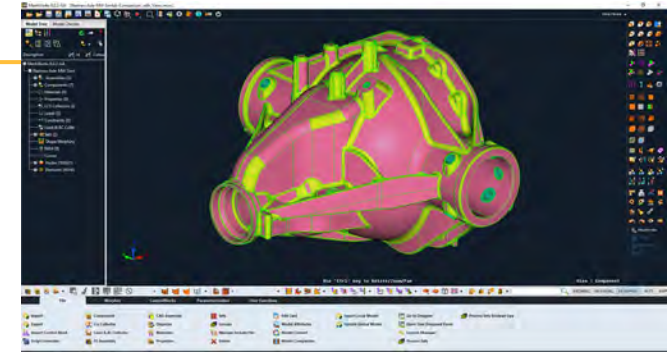
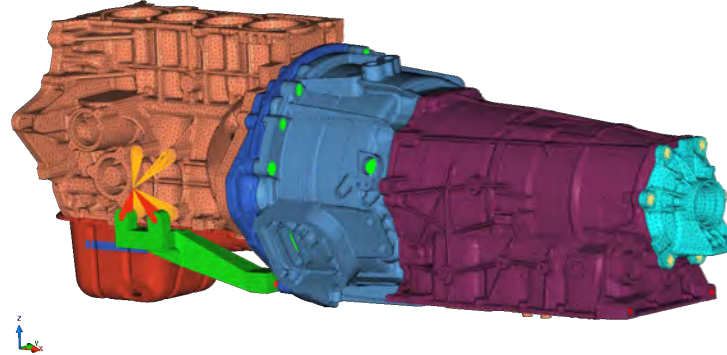
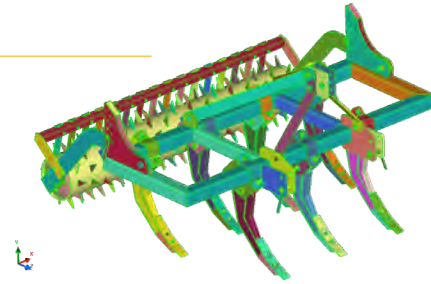
- ✓ Overview of DEP MeshWorks
- ✓ Intuitive Interface overview
- ✓ Hands-on Quick Start

2. Essential Mesh Techniques

- ✓ Essential CAD Tools
- ✓ Key meshing engines & Algorithms
- ✓ Mesh/FE Modifications
- ✓ Rapid Creation and Management of Templates
- ✓ Key Tools for Quality Checking & Visualization

3. Advanced TETRA Meshing

- ✓ Condensed TETRA Meshing Workflow
- ✓ Interactive remeshing



The key concepts of the training are illustrated with practical exercises.

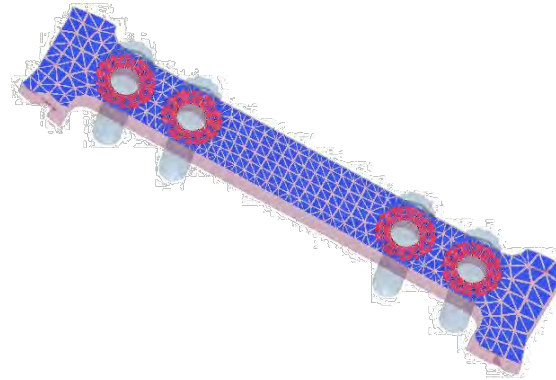
- Fast-track your TETRA meshing expertise in DEP MeshWorks with our 'Proficient Transition to DEP MeshWorks: Accelerated TETRA Meshing' course. Tailored for experienced HyperMesh users, this intensive one-day course distills the essentials of TETRA meshing, combining a focused overview of DEP MeshWorks with practical, hands-on experience.
- Streamlined Learning: Dive into the core aspects of CAD cleaning, meshing and quality, specifically streamlined for those already familiar with meshing concepts.
- Advanced TETRA Meshing Skills: The course culminates with a condensed TETRA Meshing workflow, providing insights tailored for quick mastery.
- Designed specifically for professionals transitioning from HyperMesh, this course offers an accelerated pathway to mastering TETRA meshing in DEP MeshWorks, ensuring precision and efficiency in your meshing workflow.

COMP-01 PRE-Processing: Multi-Solver Integration and Efficient Assembly



Plan du cours

1. Introduction to Multi-Solver Preprocessing
2. Model Assembly and Conversion Techniques
3. Hands-On Training in Model Setup
4. Advanced Assembly Functions



LS-DYNA

Component	Sets	Assign	Joints	Define Vector	Initials	Manage Include File	Mass Calculation
Assembly	Coord Systems	Loads	Contacts	Vector Collector	Rigid Wall	Element Config Edit	Hourglass
Lcs Collector	Materials	Boundaries	Curves	Define Transform	Control Cards	Edit Card	Airbag
Load & Bc Collector	Sections	Constraints	Tables	Define Box	DataBase	Renumber	Composite Ply

ABAQUS

Component	Sets	Assign	Contacts	Loads	Output	Element Config Edit
Assembly	Coord Systems	Contact Surface	Connectors	SubModel	Step	Edit Card
Lcs Collector	Materials	Surface Interaction	Boundaries	Initial Conditions	Manage Include File	Renumber
Load & Bc Collector	Properties	Change Friction	Equation	Control Cards	Mass Calculation	

NASTRAN

Component	Sets	Assign	Constraints	Manage Include File	Mass Calculation	Design Variable
Assembly	Coord Systems	Contact Surface	Curves	Element Config Edit	Material Orientation	Shape Domain
Lcs Collector	Materials	Contacts	NSM	Edit Card		
Load & Bc Collector	Properties	Loads	Sub Case Manager	Renumber	Shape Morphing Set	

OBJECTIF PRINCIPAL

- ✓ To empower participants with comprehensive capabilities in pre-processing, focusing on model assembly and model setup

OBJECTIFS PEDAGOGIQUES

- ✓ **Multi-Solver Proficiency:** Develop the ability to adapt pre-processing for various solvers.
- ✓ **Model Assembly Expertise:** Master advanced model assembly techniques, increasing efficiency in developing complex models.
- ✓ **Model Conversion Acumen:** Learn the nuances of model conversion, facilitating flexibility in working across different solvers.
- ✓ **Efficient Model Setup:** Acquire skills for setting up models in MeshWorks, streamlining the process.



AUDIENCE CIBLE

CAE engineers looking to enhance their skills in an advanced, multi-solver environment.



PREREQUIS

Familiarity with basic CAE concepts and Operational knowledge of the required solvers



DUREE

0.5 day



FORMATEURS



- ✓ **Practical Application and Adaptation:** Apply these skills in a hands-on setting, with a focus on adapting MeshWorks' advanced capabilities to outperform traditional preprocessing methods.

COMP-01 PRE-Processing: Multi-Solver Integration and Efficient Assembly

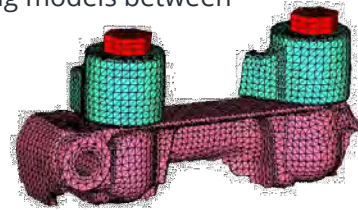
Plan détaillé du cours

1. Introduction to Multi-Solver Preprocessing

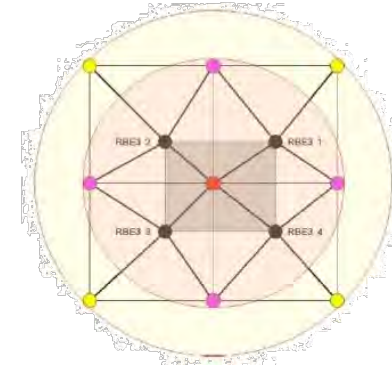
- ✓ Navigating through NASTRAN, ABAQUS, and LS-DYNA environments in MeshWorks.
- ✓ Tailoring preprocessing approaches to suit different solver requirements.

2. Model Assembly and Conversion Techniques

- ✓ Advanced strategies for assembling complex models in MeshWorks, applicable to various industries.
- ✓ Model conversion feature: seamlessly transitioning models between different solvers.



The key concepts of the training are illustrated with practical exercises.



3. Hands-On Training in Model Setup

- ✓ Practical workshop on efficient model setup in MeshWorks, suitable for both beginners and experienced users.
- ✓ Emphasis on time-saving and accuracy-enhancing techniques in model preparation.

4. Advanced Assembly Functions

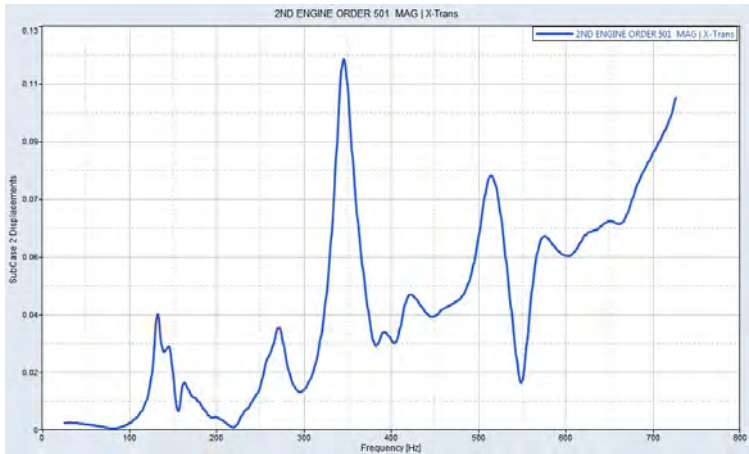
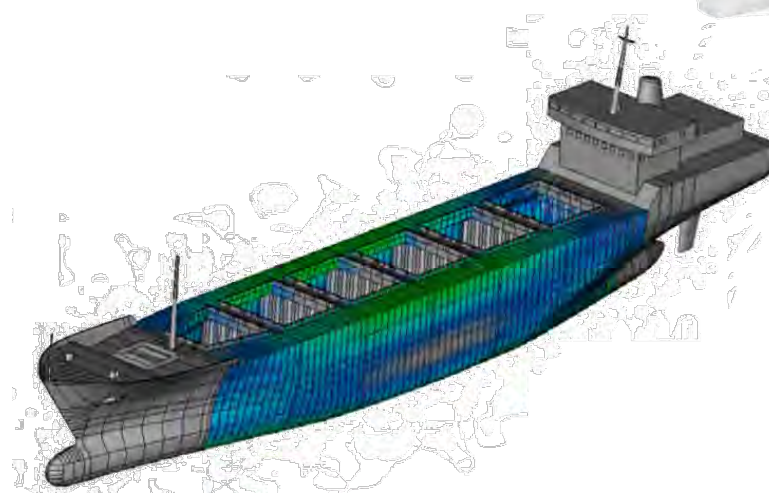
- ✓ Exploring MeshWorks' advanced model assembly functions: seam and spot welds, bolt connections, contacts creation, and more.
- ✓ Detailed walkthrough of automated and semi-automated functions for intricate component connections.

- "Pre Processing: Multi-Solver Integration and Efficient Assembly" offers an innovative approach to CAE preprocessing, blending foundational learning with advanced techniques. This course is designed to revolutionize model assembly and setup in multi-solver environments, providing an edge to both new and seasoned professionals in the CAE field.



Plan du cours

1. Introduction to Advanced Post-Processing
2. Result Analysis and Visualization Techniques
3. Innovative Post-Processing Features
4. Design Improvement and Iteration Tools



OBJECTIF PRINCIPAL

- ✓ To equip participants with post-processing skills, focusing on advanced analysis, visualization techniques, and design improvement strategies.

OBJECTIFS PEDAGOGIQUES

- ✓ **Comprehensive Analysis Skills:** Develop the ability to analyze and interpret complex simulation results effectively.
- ✓ **Visualization Mastery:** Master advanced visualization techniques for a clear understanding of simulation outcomes.
- ✓ **Automated Feature Utilization:** Learn to utilize MeshWorks' automated post-processing features for efficient result analysis.
- ✓ **Design Improvement Insights:** Gain insights into how post-processing can inform and improve design iterations.
- ✓ **Practical Application:** Apply these skills in practical scenarios, transitioning from post-processing results to direct design impact studies.

 **AUDIENCE CIBLE**

CAE engineers seeking to enhance their analytical capabilities in post-processing, particularly those requiring detailed simulation result analysis.

 **PREREQUIS**

Operation knowledge of DEP MeshWorks PRE-Processing (COMP-01 required) and Operational knowledge of the required solvers

 **DUREE**

0.5 day

 **FORMATEURS**



COMP-02 POST-Processing Proficiency: Enhancing Design Analysis

Plan détaillé du cours

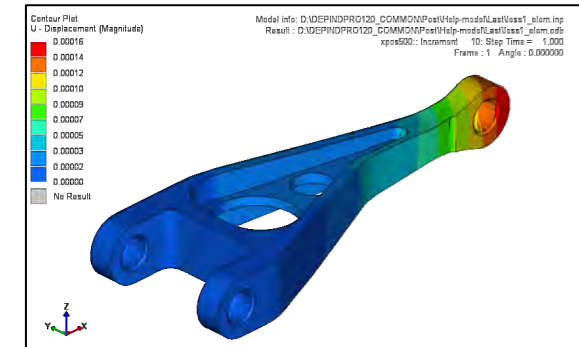
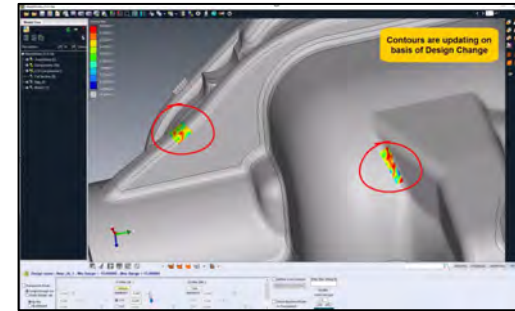
1. Introduction to Advanced Post-Processing

- ✓ Exploring MeshWorks' multi-disciplinary post-processor for simulation result analysis.
- ✓ Understanding the functionalities for reporting mechanical system performance.

2. Result Analysis and Visualization Techniques

- ✓ Learning to load, view, and interpret result files from various solvers.
- ✓ Utilizing colour contour plots, animations, deformed shape plots, and X-Y plots.

The key concepts of the training are illustrated with practical exercises.



3. Innovative Post-Processing Features

- ✓ Automated extraction of peak stress values, vibration amplitudes, and hot spot results.
- ✓ Hands-on practice with advanced tools for comprehensive model studies.

4. Design Improvement and Iteration Tools

- ✓ Exploring automated post-processing features for component and full-vehicle models.
- ✓ Enhancing design iterations through hot spot detection and unionization with host models.

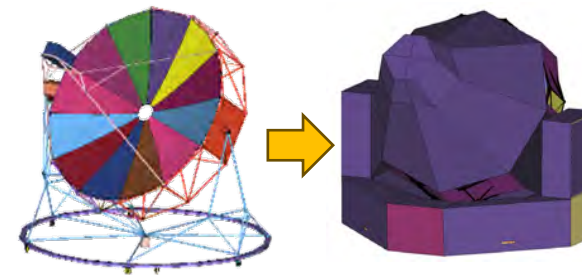
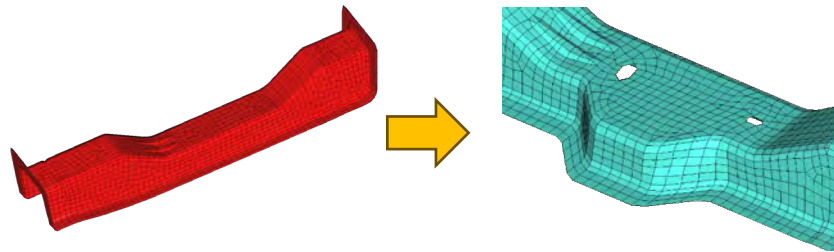
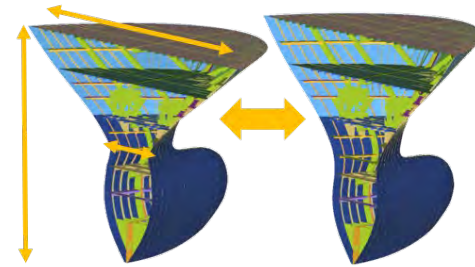
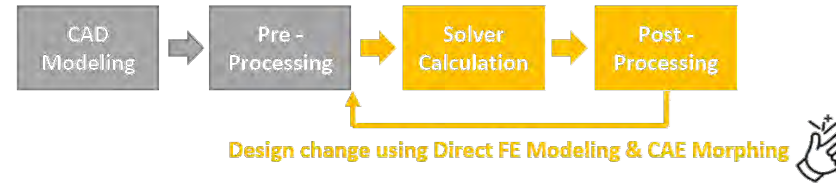
- "Post-Processing Proficiency: Enhancing Design Analysis" is an essential course for professionals who want to leverage the full potential of MeshWorks in post-processing. This course not only teaches advanced analysis techniques but also demonstrates how to utilize these insights for real-world design improvements, thereby streamlining the conventional design cycle.

COMP-03 Accelerating CAE Workflow: Morphing Techniques



Plan du cours

1. Introduction to Morphing in CAE
2. Core Morphing Techniques
3. Advanced Morphing Algorithms
4. Parameterization and Innovative design
5. Expanding Morphing Capabilities



AUDIENCE CIBLE

CAD/CAE engineers wishing to develop morphing and parameterization strategies and master the associated tools to accelerate their CAE workflow



PREREQUIS

Operational knowledge of DEP MeshWorks (BAS-0X required)



DUREE

1 day (2 x 3.5 hours)



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Deep dive into DEP MeshWorks' morphing and parameterization, focusing on practical strategies and the utilization of tools for CAE workflow acceleration.

OBJECTIFS PEDAGOGIQUES

- ✓ **Morphing Fundamentals:** Understand the core principles of morphing and their practical applications in CAE.
- ✓ **Technique Proficiency:** Master various DEP MeshWorks-specific morphing techniques, enhancing skills for complex engineering tasks.
- ✓ **Outcome-Focused Approach:** Learn to leverage morphing capabilities to achieve desired results.
- ✓ **Parameterization and DOE Skills:** Develop the ability to create effective parameterizations for efficient Design of Experiments (DOE) setups.
- ✓ **Applied Methodologies:** Implement diverse morphing methodologies, utilizing case studies to broaden real-world application skills

COMP-03 Accelerating CAE Workflow: Morphing Techniques

Plan détaillé du cours

1. Introduction to Morphing in CAE

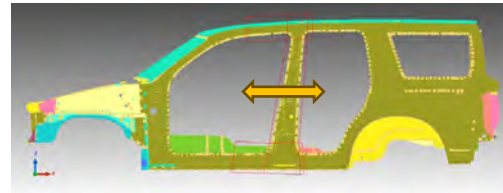
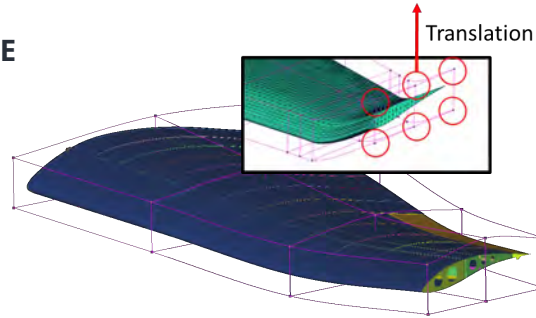
- ✓ Theory
- ✓ Practical Use
- ✓ Morphing Explained

2. Core Morphing Techniques

- ✓ 'Freeform' Method
- ✓ 'Control Block' (CB) Method
 - Creation of CB
 - Modifying CB for Desired Outcomes
- ✓ Morphing on the Fly

3. Advanced Morphing Algorithms

- ✓ 'Field Based' Approach
- ✓ 'Higher Order' Approach

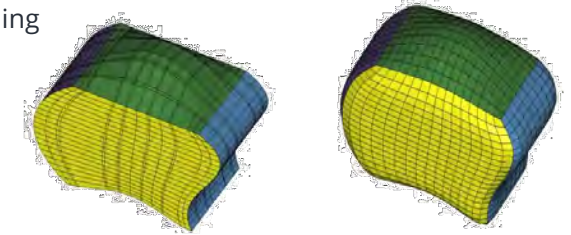
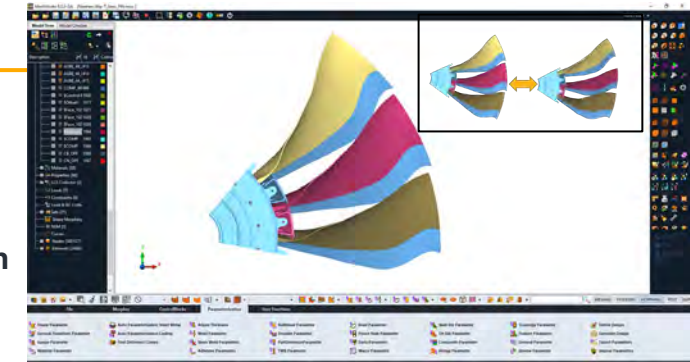


4. Parameterization and Innovative design

- ✓ Design Exploration set up
- ✓ Design & DOE Generation

5. Expanding Morphing Capabilities

- ✓ Geometric Transformations
- ✓ Projection & Mapping Transformations
- ✓ General Transform Parameter
- ✓ Macro Parameter: AutoQuality Post-Morphing



The key concepts of the training are illustrated with practical exercises.

- Embark on a journey to master the art of accelerating your CAE workflow with 'Accelerating CAE Workflow: Morphing Techniques & Applications'.
- This course delves deep into both the theoretical foundations and practical applications of morphing within CAE. From the essential 'Freeform' and 'Control Block' methods to sophisticated algorithms, you'll uncover the secrets to rapid and efficient design and analysis.
- Tailored for engineers seeking to elevate their proficiency in CAE design and optimization, this course offers a wealth of knowledge in parameterization, design generation, and advanced modeling techniques. You'll learn how to effectively apply various geometric transformations, projection, and mapping to streamline your engineering processes.
- Gain the skills to not only transform and refine designs but also to dramatically enhance the efficiency of your CAE workflow. This course is an invaluable resource for those looking to blend precision with creativity in their engineering solutions.


ADV-01 Transformative CAD Morphing Workflow

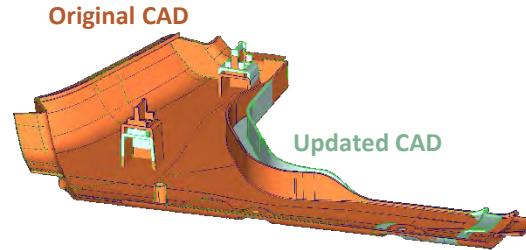
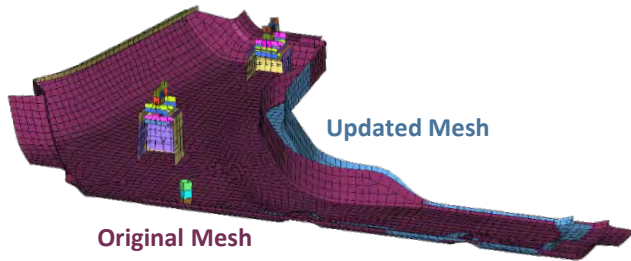


Plan du cours

1. Introduction to CAD Morphing Technologies
2. Core CAD Morphing Techniques
3. Automated CAD Update with 'Impose Deformation'

Model	Initial	Final
CAD	X	X
Mesh	X	X


 Optimized FE model obtention



OBJECTIF PRINCIPAL

- ✓ To provide an in-depth understanding of CAD morphing techniques, focusing on the innovative use of DEP MeshWorks' 'Impose Deformation' feature.

OBJECTIFS PEDAGOGIQUES

- ✓ **Understanding CAD Morphing:** Grasp the fundamental concepts of CAD morphing and its significance in modern design workflows.
- ✓ **Morphing Techniques:** Discover Freeform and Control Block morphing methods within the CAD context.
- ✓ **Practical Application:** Gain hands-on experience in applying these morphing techniques using DEP MeshWorks, reinforcing theoretical knowledge with practical skills.
- ✓ **Automated CAD Adaptation:** Learn to implement the 'Impose Deformation' feature for dynamic and automatic updates to CAD models based on mesh changes.



AUDIENCE CIBLE

CAD / CAE engineers seeking to expand their toolkit with advanced morphing capabilities and streamline their design workflow



PREREQUIS

Operational knowledge of DEP MeshWorks and its CAE Morphing capabilities (COMP-03 required)



DUREE

0.5 day



FORMATEURS



ADV-01 Transformative CAD Morphing Workflow

Plan détaillé du cours

1. Introduction to CAD Morphing Technologies

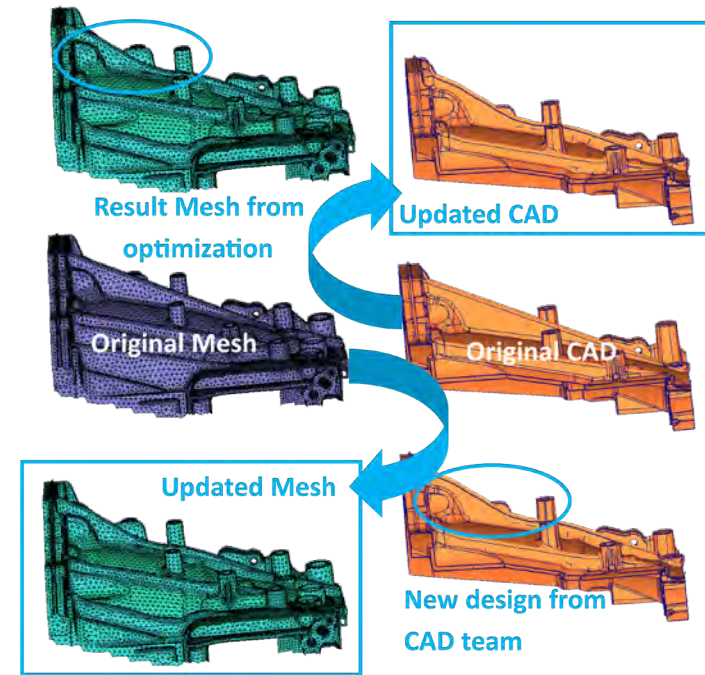
- ✓ Context of Patented Technology
- ✓ Theoretical Background and Application Scenarios
- ✓ Explanation of CAD Morphing Concepts

2. Core CAD Morphing Techniques

- ✓ Freeform Morphing Method
- ✓ Control Block Morphing Technique
- ✓ Practical Hands-On with DEP MeshWorks

3. Automated CAD Update with 'Impose Deformation'

- ✓ Implementing Automatic CAD Updates
- ✓ Aligning Mesh Modifications with CAD Models



The key concepts of the training are illustrated with practical exercises.

- This course offers a transformative journey into CAD morphing, blending patented technologies with practical methodologies. Participants will explore techniques like Freeform and Control Block morphing, gaining hands-on experience with DEP MeshWorks. A special focus on the 'Impose Deformation' feature demonstrates how CAD models can be automatically updated in response to mesh changes, marking a significant advancement in CAD design workflows.

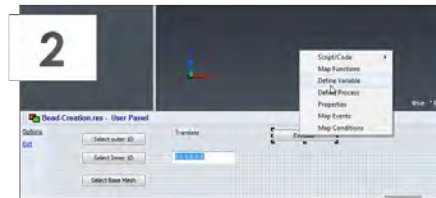
ADV-02 Efficiency through Process Automation: Streamlining CAE workflows



Plan du cours

1. Introduction to Process Automation in CAE
2. Developing Custom GUIs and Specialist Menus
3. Command Recording and Macro Integration
4. Python Integration and Scripting
5. Debugging Strategies and Advanced Options
6. Customized Live Workshop

3 easy steps to create your own dedicated workflow tool



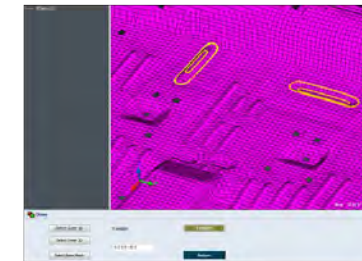
Create your GUI by click & drop



Plumb the GUI with recorded process chart



Record your workflow



Publish and use the tool



AUDIENCE CIBLE

CAD / CAE engineers and developers who want to master the process automation capabilities of DEP MeshWorks



PREREQUIS

Operational knowledge of DEP MeshWorks (BAS-0X required)



DUREE

3 days, including a tailored live workshop on the final day for practical application and customization based on customer needs.



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ Equip participants with comprehensive skills and knowledge to create, modify, and optimize automated specialist processes, known as Process Automation (PA) of DEP MeshWorks

OBJECTIFS PEDAGOGIQUES

- ✓ **Foundational Understanding:** Grasp the fundamental principles and capabilities of the "Process Automation" tool in DEP MeshWorks.
- ✓ **GUI and Menu Creation:** Learn to design personalized user interfaces and specialist menus tailored to specific workflow requirements.
- ✓ **Command Recording Mastery:** Develop the ability to record and utilize commands in DEP MeshWorks for creating and refining automated processes.
- ✓ **Macro-Interface Linking:** Acquire skills to establish connections between user interfaces and recorded macro commands.
- ✓ **Python Integration:** Understand how to incorporate Python scripts and executables into DEP MeshWorks for advanced process automation.
- ✓ **Debugging Proficiency:** Gain insights into effective debugging techniques for maintaining and troubleshooting process automation workflows.

ADV-02 Efficiency through Process Automation: Streamlining CAE workflows

Plan détaillé du cours

1. Introduction to Process Automation in CAE

- ✓ Understanding General Principles
- ✓ Exploring the Scope and Impact of Automation in CAE Workflows

2. Developing Custom GUIs and Specialist Menus

- ✓ Techniques for Creating User Interfaces
- ✓ Building Specialized Menus within DEP MeshWorks

3. Command Recording and Macro Integration

- ✓ Mastering Command Recording for Process Automation
- ✓ Linking Interfaces with Recorded Macros



**Process
Automation**

4. Python Integration and Scripting

- ✓ Utilizing Python Routines for Advanced Automation
- ✓ Scripting and Programming within the DEP MeshWorks Environment



5. Debugging Strategies and Advanced Options

- ✓ Tips and Techniques for Efficient Debugging
- ✓ Exploring Advanced Features for Process Customization

6. Customized Live Workshop

- ✓ Hands-On Workshop Tailored to the Customer's Specific Needs

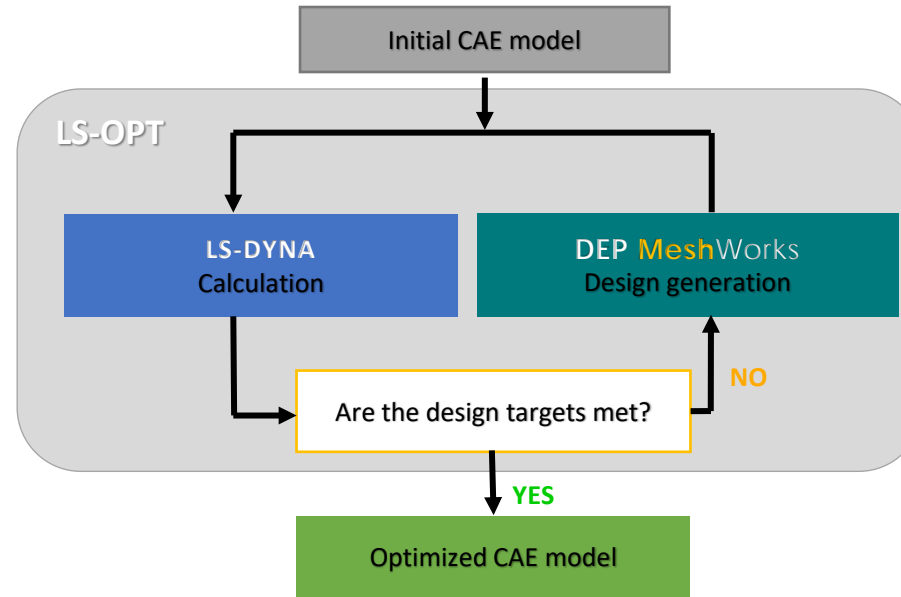
The key concepts of the training are illustrated with practical exercises.

- This course is designed to empower professionals to enhance efficiency in CAE workflows through advanced process automation. Participants will gain expertise in creating custom GUIs, integrating command macros, utilizing Python scripts, and debugging within DEP MeshWorks. The course culminates in a customized live workshop, offering practical, hands-on experience tailored to real-world applications.



Plan du cours

1. Preparation for Optimization
2. Design of Experiments (DOE) Generation
3. Integration and Optimization Process
4. Final Adjustments and Debugging



OBJECTIF PRINCIPAL

- ✓ Equip participants with the knowledge and skills to effectively couple DEP MeshWorks, LS-DYNA, and LS-OPT for design optimization.

OBJECTIFS PEDAGOGIQUES

- ✓ **Optimization-Ready LS-DYNA Models:** Gain expertise in preparing LS-DYNA models for the optimization process.
- ✓ **Mastery of LS-OPT Process:** Understand the complete optimization process utilizing LS-OPT, including system parameterization and DOE creation.
- ✓ **Effective DOE Creation and Modification:** Learn to create and modify DOE setups directly in DEP MeshWorks, with and without interfaces, including the import of parameter data.
- ✓ **DEP MeshWorks and LS-OPT Coupling:** Develop the capability to generate coupling files that link DEP MeshWorks with LS-OPT for seamless optimization workflows.



AUDIENCE CIBLE

CAD / CAE engineers wishing to develop parametrical optimization strategies improving their product development process



PREREQUIS

Operational knowledge of DEP MeshWorks (BAS-0X required), its parameterization capabilities (COMP-03 required) and LS-OPT



DUREE

0.5 day



FORMATEURS



ADV-03 Bridging with LS-OPT Software for Optimized Design

Plan détaillé du cours

1. Preparation for Optimization

- ✓ Preparing an LS-DYNA Model for Optimization
- ✓ Setting Up the DEP MeshWorks File

2. Design of Experiments (DOE) Generation

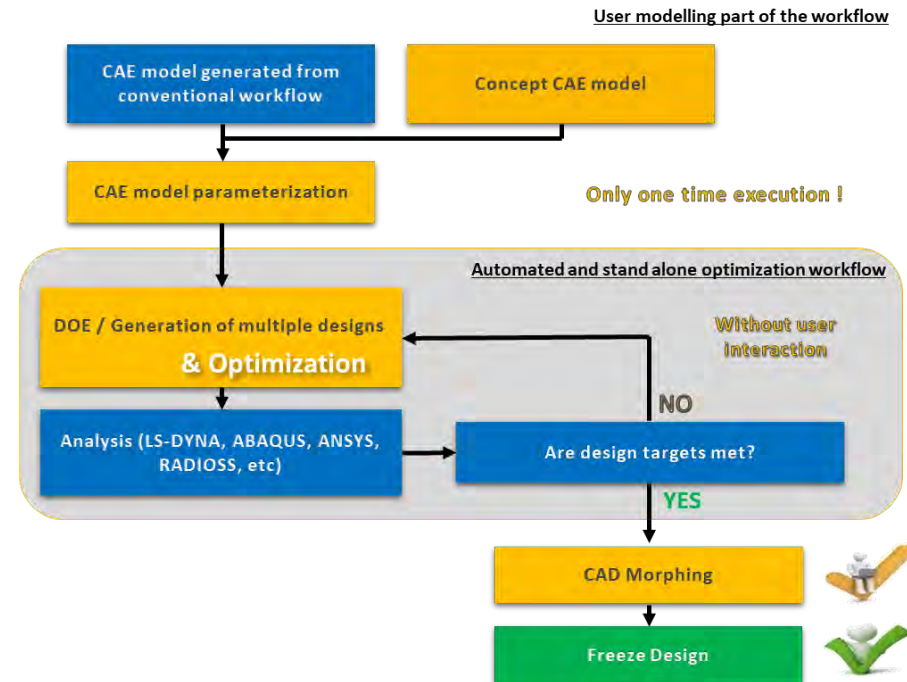
- ✓ Strategies for Generating Effective DOE in DEP MeshWorks
- ✓ Creation and Adjustment of LS-OPT Files

3. Integration and Optimization Process

- ✓ Understanding the Optimization Process with LS-OPT
- ✓ Deep Dive into Model Parameterization Systems

4. Final Adjustments and Debugging

- ✓ Implementing Final Adjustments for Optimal Design
- ✓ Practical Debugging Tips for Optimization



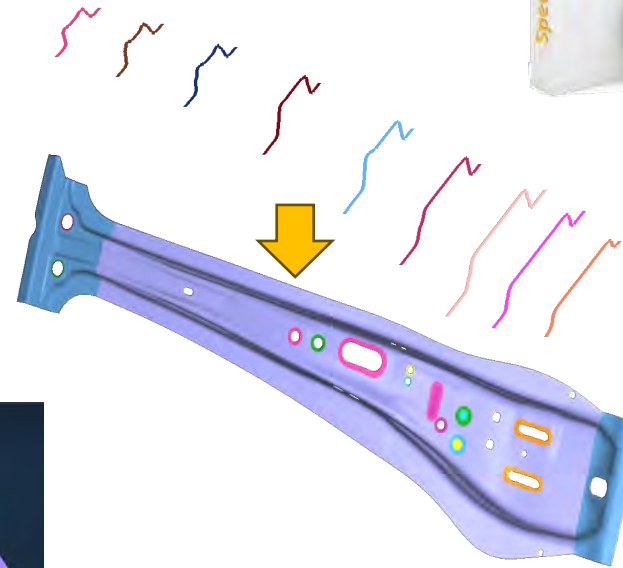
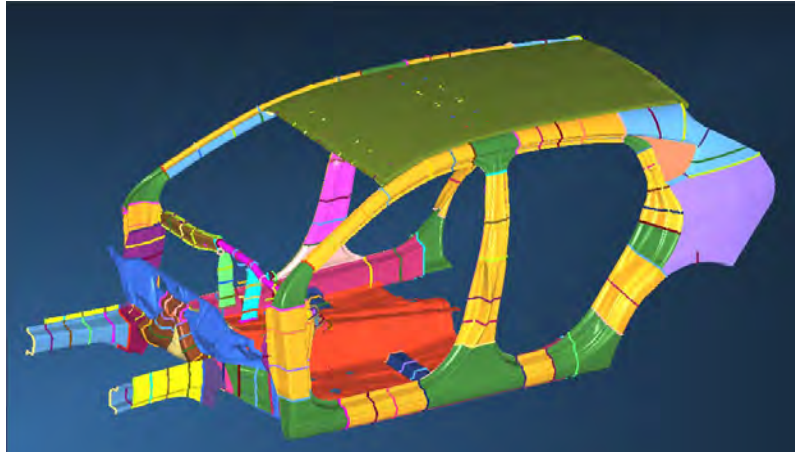
The key concepts of the training are illustrated with practical exercises.

- This course offers a concise yet comprehensive journey through the optimization process, specifically focusing on the integration of DEP MeshWorks, LS-DYNA, and LS-OPT.
- Participants will learn to transform an LS-DYNA model based on optimization specifications to achieve the optimal design, gaining insights into model preparation, DOE generation, and system parameterization.



Plan du cours

1. Member and Hollow Body Creation
2. Joint Design and Innovation
3. Inner Structural Components
4. Concept Enhancement Techniques



AUDIENCE CIBLE

CAE engineers in the automotive sector (crash, NVH, stamping) wishing to significantly accelerate their design cycles.



PREREQUIS

Operational knowledge of DEP MeshWorks and its CAE Morphing capabilities (COMP-03 required)



DUREE

1 day



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ To equip participants with the skills to proficiently creating and modifying structural components like hollow bodies and joints, directly at the FE level, with a focus on efficiency and innovation.

OBJECTIFS PEDAGOGIQUES

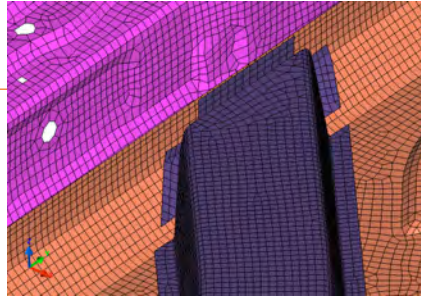
- ✓ **Comprehension of ConceptWorks:** Grasp the philosophy and capabilities of ConceptWorks, including real-world application examples.
- ✓ **Member Creation Mastery:** Learn to create members using existing cross-section databases and sketch new sections for customized solutions.
- ✓ **Joint Design Skills:** Acquire the ability to design various joints, enhancing structural integrity and design versatility.
- ✓ **Assembly Optimization:** Master techniques to adjust and depenetrate mid-surfaces in assemblies for optimized design.
- ✓ **Rapid Structural Modifications:** Develop the skill to swiftly modify structural designs at a localized level, leveraging the module's advanced capabilities.

SPE-01 ConceptWorks – Revolutionizing Sheet Metal Design

Plan détaillé du cours

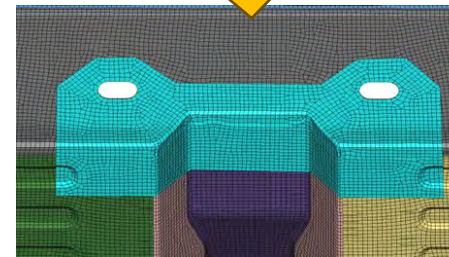
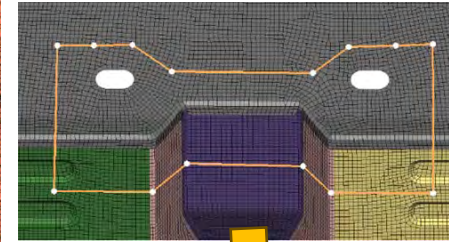
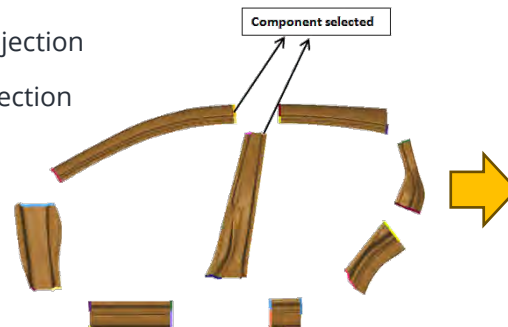
1. Member and Hollow Body Creation

- ✓ Constant cross-section along one section
- ✓ Constant cross-section from an existing one
- ✓ Variable cross-section using different trajectories
- ✓ Variable cross-section using multiple input sections
- ✓ Variable cross-section on reference plane
- ✓ Advanced method for complex floors



2. Joint Design and Innovation

- ✓ Extruded joint with automated flange projection
- ✓ External joint with automated flange projection
- ✓ External wall joint
- ✓ End Caps
- ✓ Auto joint



3. Inner Structural Components

- ✓ A-Pillar
- ✓ Roof rail
- ✓ Header / Roof bow
- ✓ Header / Bow joint
- ✓ B-Pillar

4. Concept Enhancement Techniques

- ✓ Holes
- ✓ Beads
- ✓ Bosses
- ✓ Structural stiffeners
- ✓ Patches
- ✓ Fillets
- ✓ Split
- ✓ Automatic flange adjustment
- ✓ Morphing

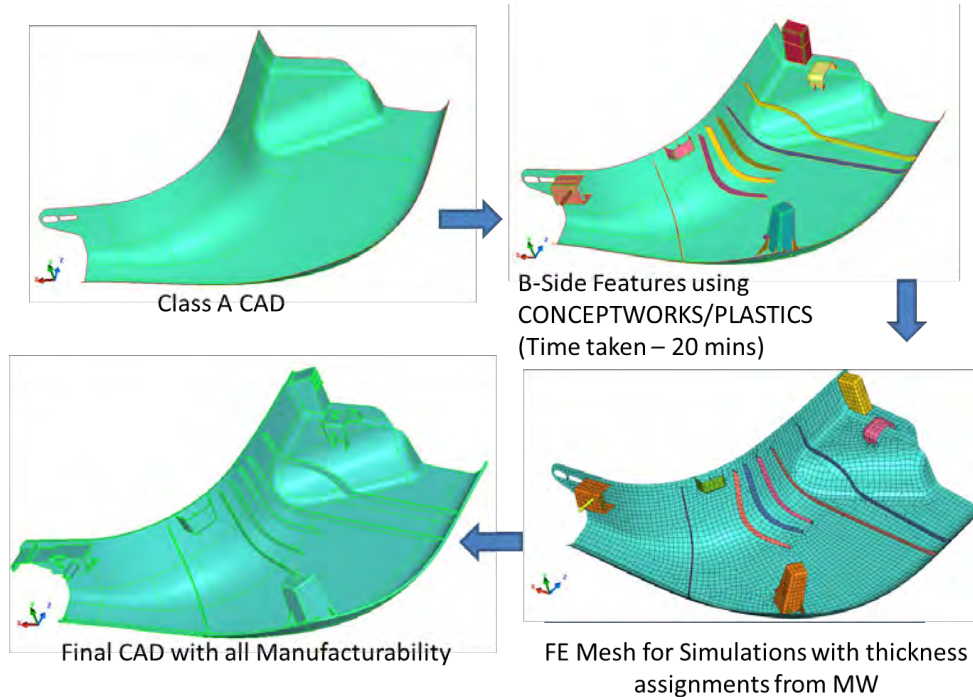
The key concepts of the training are illustrated with practical exercises.

- "ConceptWorks Mastery: Revolutionizing Sheet Metal Design" is an intensive, hands-on course designed to transform how automotive CAE engineers approach sheet metal design. Participants will gain invaluable insights and practical skills in creating, adjusting, and optimizing structural components, markedly accelerating design processes and enhancing product quality.



Plan du cours

1. Introduction to ConceptWorks for Plastics
2. Specialized Feature Creation
3. Advanced Rib Creation and Quality Management
4. Practical Application and Design Optimization



OBJECTIF PRINCIPAL

- ✓ To provide participants with a thorough understanding and practical skills in using the ConceptWorks Plastics module for automated plastics design, enhancing efficiency and innovation in their projects.

OBJECTIFS PEDAGOGIQUES

- ✓ **Automated Design Proficiency:** Develop expertise in the automated design capabilities of ConceptWorks for plastics.
- ✓ **Specialized Feature Creation:** Master the creation of specialized plastic features and their combinations.
- ✓ **Complex Rib Design:** Learn to design complex rib structures, including honeycomb patterns, with automated quality assurance.
- ✓ **Practical Design Application:** Apply these techniques in practical design scenarios, focusing on optimizing the design process for plastic components.
- ✓ **Innovation in Plastics Design:** Explore innovative approaches to plastics design, leveraging ConceptWorks' capabilities to push the boundaries of conventional design.



AUDIENCE CIBLE

Designers, engineers involved in plastics design and manufacturing, looking to harness automated design tools for enhanced efficiency and innovation.



PREREQUIS

Operational knowledge of DEP MeshWorks with QUAD Meshing focus (BAS-01Q required)



DUREE

0.5 day



FORMATEURS



SPE-02 ConceptWorks Plastics – Automated Design Innovations

Plan détaillé du cours

1. Introduction to ConceptWorks for Plastics

- ✓ Exploring the capabilities of the ConceptWorks Plastics module in creating specialist features efficiently.
- ✓ Understanding the automated design process at both CAD and FE levels.

2. Specialized Feature Creation

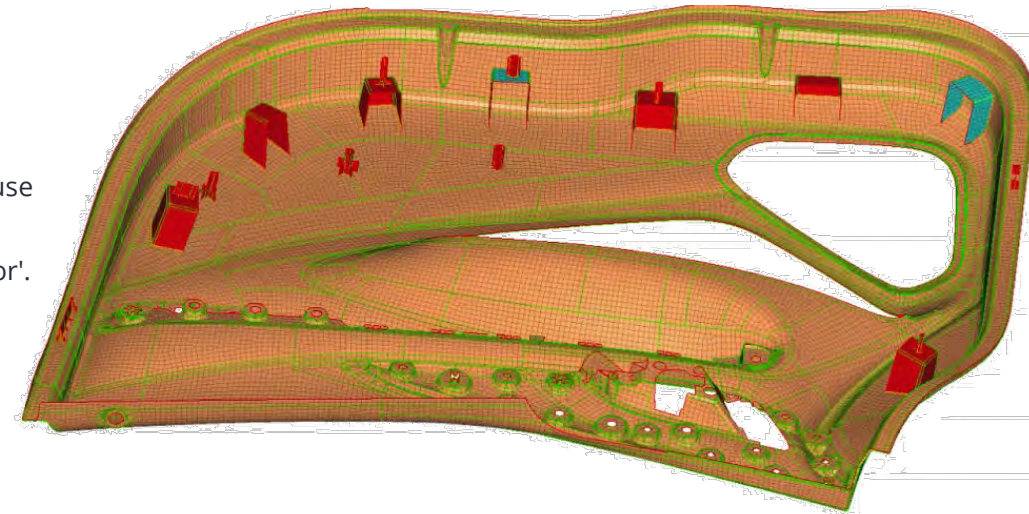
- ✓ Techniques for designing heat stakes, locators, clip sections, clip towers, locator pins, and dog house base features.
- ✓ Approaches to combine multiple features, such as 'Dog House - Heat Stake' and 'Dog House Locator'.

3. Advanced Rib Creation and Quality Management

- ✓ Methods for creating simple, complex, and honeycomb ribs.
- ✓ Ensuring high-quality insertions in complex areas through automated processes.

4. Practical Application and Design Optimization

- ✓ Hands-on training in using ConceptWorks Plastics module for real-world scenarios.
- ✓ Focusing on design efficiency and optimization for plastic components.



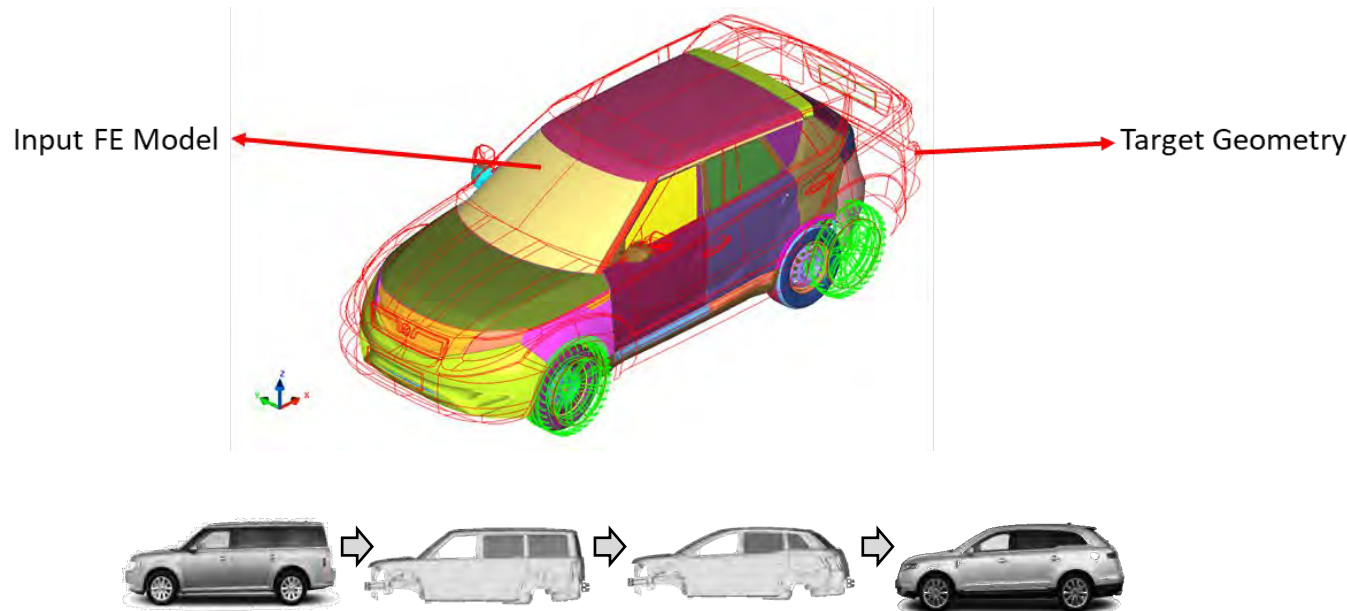
The key concepts of the training are illustrated with practical exercises.

- "ConceptWorks Plastics: Automated Design Innovations" is an advanced course tailored for professionals in the plastics industry. It equips participants with cutting-edge skills in automated plastics design, enabling them to create complex and innovative components with ease and precision using the ConceptWorks Plastics module.



Plan du cours

1. **Foundational Training Phase: Mastering Vehicle Morphing Technologies**
2. **Supervision and Coaching Phase: Practical Application on a Pilot Project**



OBJECTIF PRINCIPAL

- ✓ To empower participants to proficiently master the methodologies for updating the design of both EF and CAD vehicles through morphing, ultimately achieving a newly designed EF vehicle model.

OBJECTIFS PEDAGOGIQUES

- ✓ **Advanced Morphing Techniques:** Develop an in-depth understanding of morphing, particularly for complex assemblies such as full vehicles.
- ✓ **Practical Morphing Application:** Learn to morph an existing vehicle into a new developmental model.
- ✓ **Conditional Morphing Strategies:** Master conditional steps essential for executing full vehicle morphing.
- ✓ **Model Adaptability:** Acquire the skills to apply morphing methodologies to both CAD and FE models.
- ✓ **Design Line Justification:** Understand how to justify projection choices on all the design lines of the new vehicle.
- ✓ **Outcome Achievement:** Successfully produce a new EF vehicle design through the application of learned skills.



AUDIENCE CIBLE

CAD / CAE engineers who are involved in vehicle development and design, seeking to advance their skills in vehicle morphing for efficient design updates.



PREREQUIS

Operational knowledge of DEP MeshWorks and its CAE Morphing capabilities (COMP-03 required)



DUREE

Flexible, adapted to client needs. Depending on the participants' existing background and the project scope.



FORMATEURS

External expert *Sridhar Bijjala (DEP USA)*

SPE-03 Full Vehicle Morphing Mastery: Redefining Vehicle Design

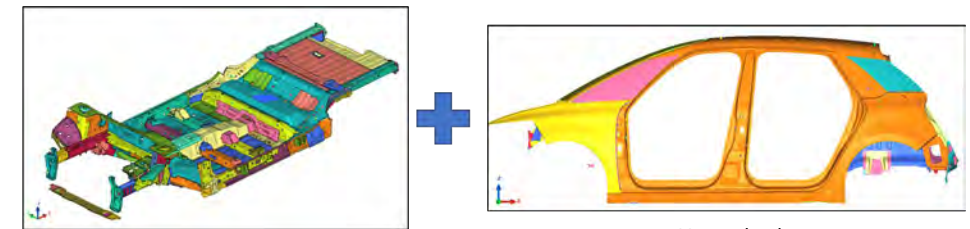
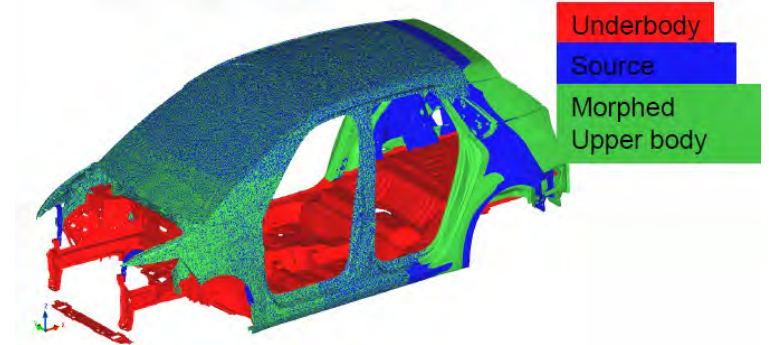
Plan détaillé du cours

1. Foundational Training Phase: Mastering Vehicle Morphing Technologies

- ✓ Focus on key technologies essential for full vehicle morphing.
- ✓ Proportional modifications in CAD/CAE, dimensional changes in CAD while maintaining manufacturing constraints.
- ✓ Techniques for projecting onto CAD/CAE target design lines.

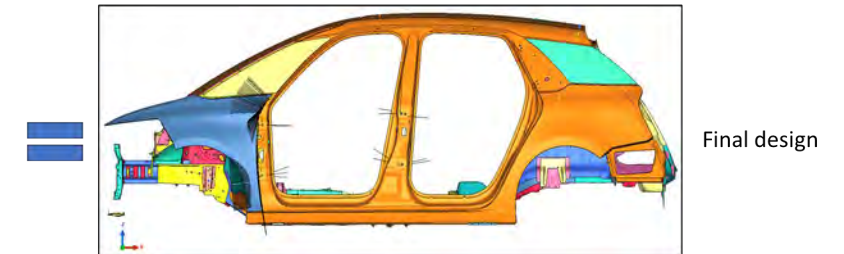
2. Supervision and Coaching Phase: Practical Application on a Pilot Project

- ✓ Hands-on supervision and coaching during a real pilot project, led by the trainer from the initial phase.
- ✓ Dual benefits: Applying concepts to a tangible project with expert on-site guidance and producing a new vehicle model using full vehicle morphing methodologies.



Under body (segregated)

Upper body



Final design

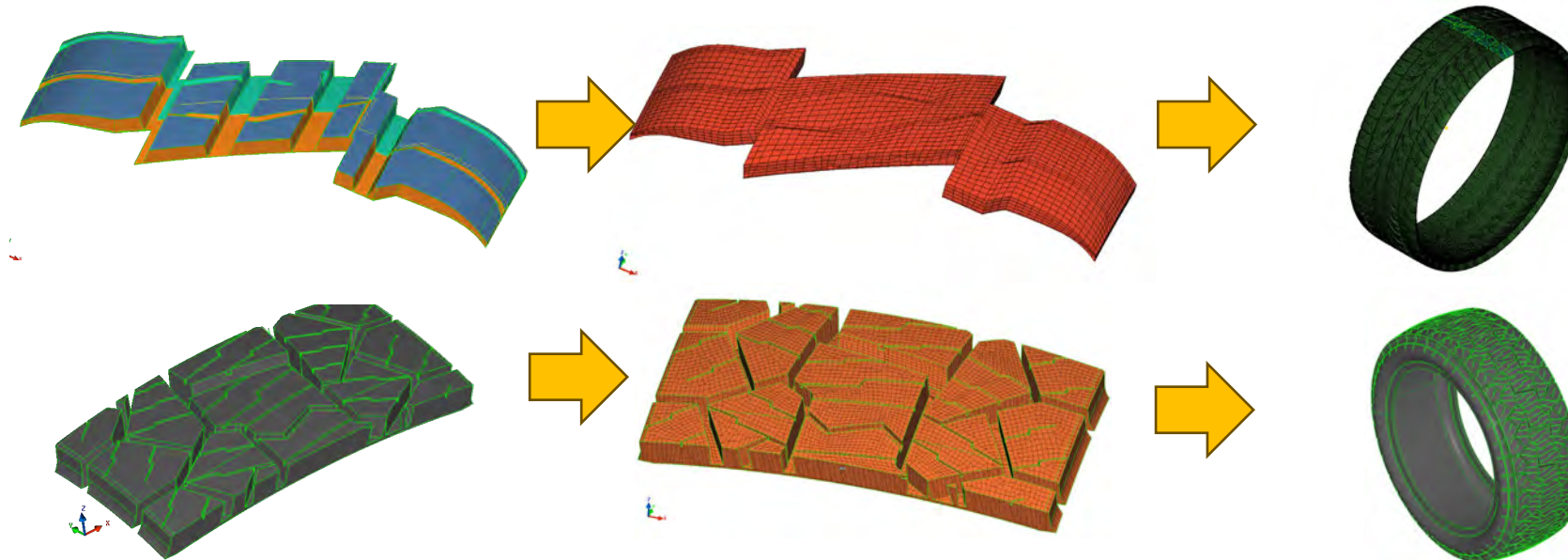
The key concepts of the training are illustrated with practical exercises.

- "Full Vehicle Morphing Mastery: Redefining Vehicle Design" offers a unique blend of theoretical learning and practical application. Participants will embark on a transformative journey, gaining hands-on experience in the latest vehicle morphing techniques and methodologies. The course culminates in a real-world pilot project, allowing trainees to apply their skills to actual vehicle design scenarios, guided by expert coaching.



Plan du cours

1. Module Introduction and Automation Philosophy
2. Complex Part Workshop
3. Advanced Techniques and Parameterization



AUDIENCE CIBLE

CAD / CAE engineers specializing in tire-related projects who aim to expedite their design and meshing processes.



PREREQUIS

Operational knowledge of DEP MeshWorks with a focus on HEXA meshing (BAS-01H required). Familiarity with pneumatic applications.



DUREE

1 day



FORMATEURS



OBJECTIF PRINCIPAL

- ✓ To enable participants to proficiently master the automated process of hexahedral meshing for tire treads, including setting up grooves for pattern optimization.

OBJECTIFS PEDAGOGIQUES

- ✓ **Hexahedral Meshing Expertise:** Develop an in-depth understanding of semi-automated hexahedral meshing methods for tire applications.
- ✓ **Groove Pattern Implementation:** Learn to incorporate groove patterns within a tire section effectively.
- ✓ **Conditional Meshing Steps:** Acquire the skills to apply conditional steps for creating a high-quality hexahedral tire mesh.
- ✓ **Adaptability Across Tire Types:** Gain the ability to adapt these methods to a variety of tire designs.
- ✓ **Efficient Meshing Process:** Become proficient in quickly meshing tires using defined automated processes, enhancing productivity and accuracy.

SPE-04 Advanced Tire HEXA Meshing: Accelerating Tire Design

Plan détaillé du cours

1. Module Introduction and Automation Philosophy

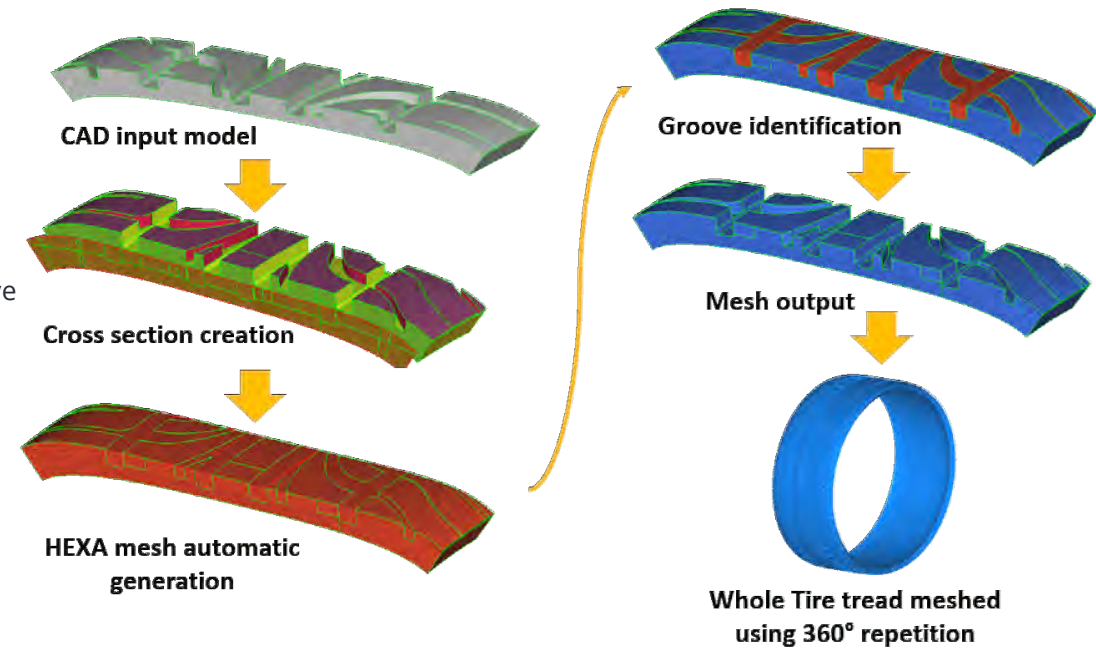
- ✓ Understanding the module's purpose, benefits, and the philosophy behind its automation.
- ✓ Overview of the automated process steps for tire meshing.

2. Complex Part Workshop

- ✓ Hands-on workshop focusing on a complex tire part.
- ✓ Steps include: CAD import, cross-section creation, 2D meshing, HEXA mesh creation, groove identification, mesh pattern generation, and 360° repetition.

3. Advanced Techniques and Parameterization

- ✓ Exploring deeper into parameterization methods.
- ✓ Studying tire section variations for optimization.



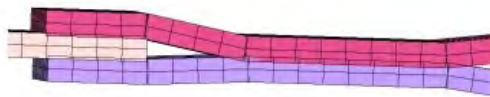
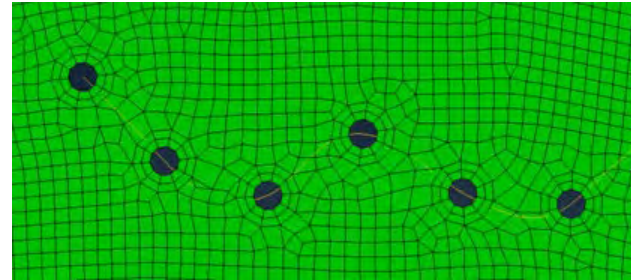
The key concepts of the training are illustrated with practical exercises.

- "Advanced Tire HEXA Meshing: Accelerating Tyre Design" is an essential course for CAE engineers in the tire industry, offering a blend of theoretical knowledge and practical skills. This course is a gateway to mastering efficient and innovative tire meshing techniques, significantly boosting design cycle efficiency and mesh quality.

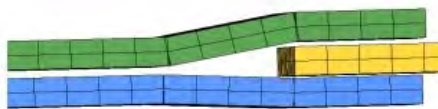


Plan du cours

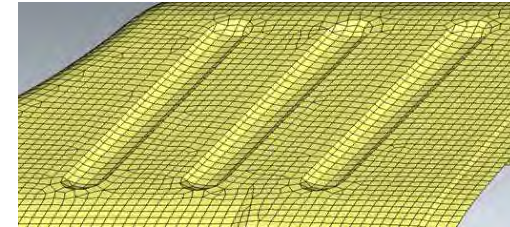
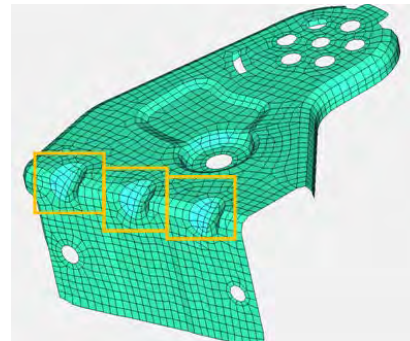
1. **Design Enablers for Body Structures**
2. **Vehicle Conversion and Weld Creation Tools**
3. **Feature Replication and Hemming Creation**
4. **Specialized Automation Tools for Body Structures**



Penetration



Gap



AUDIENCE CIBLE

CAE engineers specializing in body, chassis, subframe design, particularly in crash and NVH applications, seeking advanced knowledge in MeshWorks.



PREREQUIS

Advanced knowledge of DEP MeshWorks and ConceptWorks (SPE-01 required). Operational knowledge of body applications



DUREE

1 day



FORMATEURS

External expert *Sridhar Bijjala (DEP USA)*

OBJECTIF PRINCIPAL

- ✓ To empower participants with the advanced capabilities of MeshWorks focusing on design optimization, conversion tools, and specialized automation for crash and NVH scenarios.

OBJECTIFS PEDAGOGIQUES

- ✓ **Advanced Design Skills:** Gain expertise in specific design enablers and reinforcement techniques unique to body structures.
- ✓ **Conversion and Welding Mastery:** Master the art of vehicle model conversion and sophisticated weld creation techniques.
- ✓ **Feature Replication Proficiency:** Learn to effectively replicate features for consistent design quality and efficiency.
- ✓ **Practical Automation and Setup:** Develop skills in using MeshWorks' automation tools for efficient setup of crash load cases and durable to NVH transitions.

SPE-05 Advanced Automated Features for Body, Chassis & Subframe

Plan détaillé du cours

1. Design Enablers for Body Structures

- ✓ In-depth exploration of reinforcement techniques, including patches, component extensions, and LWB/TWB.
- ✓ Understanding the creation and application of crash initiators, holes, ribs, stiffeners, beads, and bosses in body structures.

2. Vehicle Conversion and Weld Creation Tools

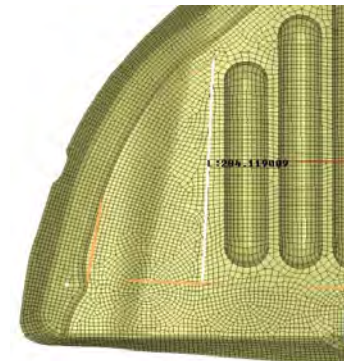
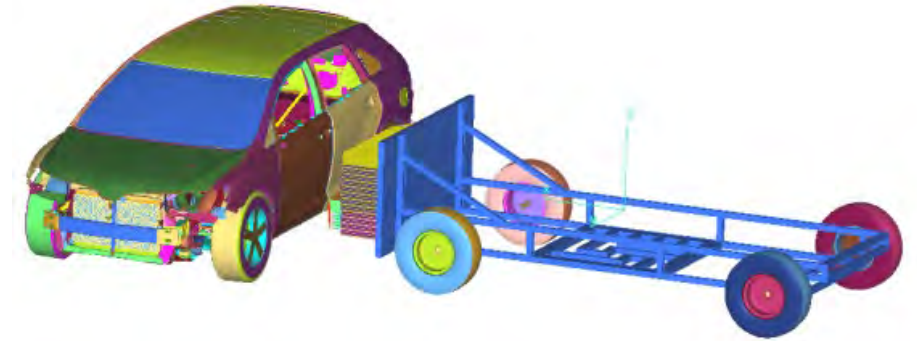
- ✓ Mastery of the vehicle conversion tool for LS-Dyna to Nastran model transformation, including connection conversions.
- ✓ Proficiency in auto weld creation, part replacement, and auto flange adjustment.

3. Feature Replication and Hemming Creation

- ✓ Techniques for replicating components with constraints and connections.
- ✓ Detailed instruction on hemming mesh creation and rigid connection implementation.

4. Specialized Automation Tools for Body Structures

- ✓ Exploring the crash load cases setup automation, hood bead creation, and design space interior for body structures.
- ✓ Advanced modeling for chassis and subframes, including automated meshing and modeling as per solver templates.



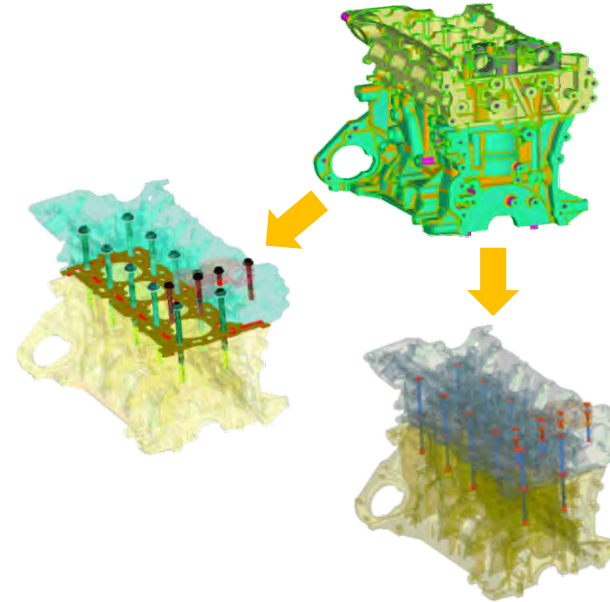
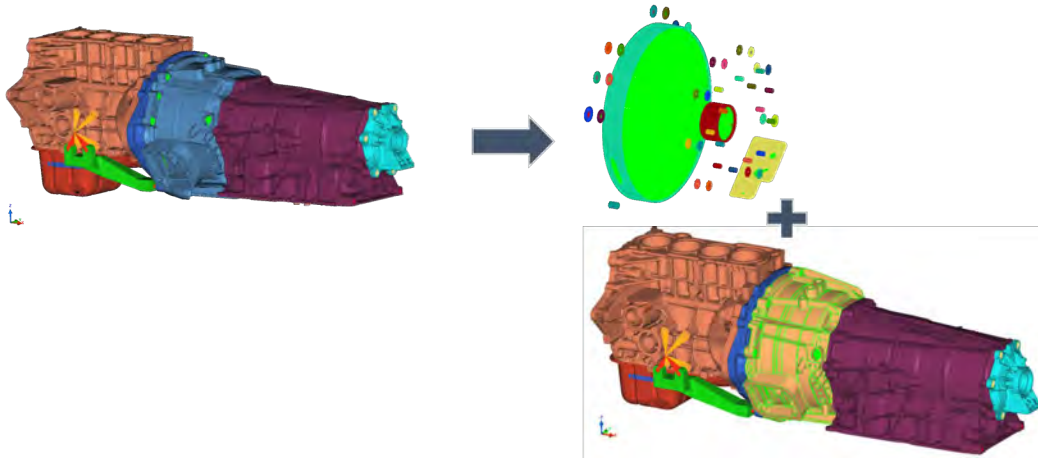
The key concepts of the training are illustrated with practical exercises.

- "Advanced Automated Features for Body Structures" is a targeted course that delves deep into the specialized tools and techniques of MeshWorks for body structure applications. Participants will come away with a nuanced understanding of MeshWorks' capabilities in reinforcing design processes, optimizing model conversions, and leveraging automation for efficient and effective body structures design.



Plan du cours

1. **Optimized Design Definition for Powertrain Applications**
2. **Specialized Modelling and Meshing Automation**
3. **HEXA Automation and Complex Component Modelling**
4. **Advanced Welding and Connection Techniques**
5. **Innovative Automation for Component Replacement and Analysis**



AUDIENCE CIBLE

CAE engineers in powertrain engineering and casting applications seeking to enhance their expertise in advanced automation techniques.

PREREQUIS

Advanced knowledge of DEP MeshWorks (COMP-03 required). Operational knowledge of powertrain engineering.

DUREE

2 days

FORMATEURS

External expert *Sridhar Bijjala (DEP USA)*

OBJECTIF PRINCIPAL

- ✓ To enable participants to utilize MeshWorks' advanced automated features focusing on design optimization, specialized modeling, and automated processes specific to powertrain/casting applications.

OBJECTIFS PEDAGOGIQUES

- ✓ **Design Optimization Mastery:** Develop skills in creating optimized, minimalistic powertrain designs using MeshWorks.
- ✓ **Modeling and Meshing Proficiency:** Gain expertise in automated meshing and modeling processes for key powertrain components.
- ✓ **Advanced Welding Techniques:** Learn to efficiently create complex weld connections, enhancing structural integrity in powertrain designs.
- ✓ **Component Automation and Analysis:** Master automated tools for component replacement and analysis, including bolt slippage and roller bearing modeling.
- ✓ **Practical Application:** Apply these advanced techniques in real-world powertrain engineering scenarios.

SPE-06 Powertrain Engineering: Advanced Automation Techniques

Plan détaillé du cours

1. Optimized Design Definition for Powertrain Applications

- ✓ Strategies for achieving minimalist powertrain designs.
- ✓ Techniques for design space creation, extension, and filling.
- ✓ Advanced methods for tetra rib and hole creation, and auto-parameterization in casting.

2. Specialized Modelling and Meshing Automation

- ✓ Crankshaft modeling for EHD, durability, and MBD to reduce time consumption.
- ✓ Automated conrod meshing, clutch meshing, and property assignment processes.

3. HEXA Automation and Complex Component Modelling

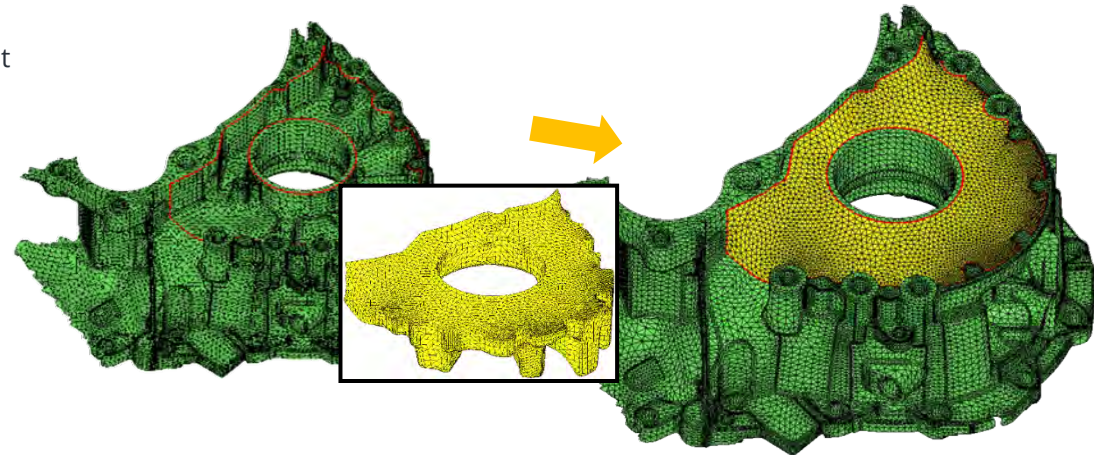
- ✓ HEXA automation for rotors, gears, pawls, bullets, pins, rods, etc.
- ✓ Specific tools for shaft modelling and 3D bolt match meshing.

4. Advanced Welding and Connection Techniques

- ✓ Creating slug and nugget weld connections efficiently.
- ✓ Weld joint creation for 3D weldment corners and roller bearing modelling.

5. Innovative Automation for Component Replacement and Analysis

- ✓ Stitch valve body tool and automated part replacement.
- ✓ Bolt slippage analysis and 1D to 3D bolt modeling techniques.



The key concepts of the training are illustrated with practical exercises.

- "Powertrain Engineering: Advanced Automation Techniques" is a specialized course designed for professionals in powertrain and casting applications. It offers an in-depth exploration of MeshWorks' advanced features, empowering participants to innovate and optimize their powertrain designs and processes with cutting-edge automation tools.



CENTRE DE FORMATION

- **Conditions financières**

Pour toute formation, vous pouvez nous contacter pour **demandeur un devis**:



formations@depeurope.com

+33 (0)5 61 44 54 98

- **Date limite d'inscription**

Une semaine au plus tard avant le début de la formation, afin d'adresser les convocations en temps utile.

- **Désistement**

Seules les demandes parvenant au plus tard une semaine avant le début de la formation seront prises en compte.

- **Convention de Formation**

La facture envoyée tient lieu de convention professionnelle simplifiée (une convention séparée pourra être établie sur demande).

- **Horaires**

Sauf demande particulière, les cours débutent à **9h00** pour se terminer vers **18h00**.

- **Organisation**

Sauf mention particulière, les cours sont dispensés en français et les supports de cours sont écrit en français.

- **Facturation**

La formation est facturée en fin de prestation et payable à 30 jours, date d'émission de la facture.



• Règles d'hygiène

Le respect de la législation en vigueur liée au COVID est primordiale. Tant que la situation sanitaire l'exigera, seront appliqués au sein des locaux Dynas+ Engineering Products les gestes barrières suivants afin de préserver la santé de tous:

- Se laver régulièrement les main
- Tousser ou éternuer dans son coude ou dans un mouchoir
- Utiliser des mouchoirs à usage unique et les jeter
- Saluer sans se serrer la main
- Respecter les mesures de distanciation physique
- Aérer toutes les 3 heures
- Nettoyer régulièrement le matériel manipulé
- Porter le masque dans les espaces clos

Par ailleurs, les participants devront se conformer à la réglementation en vigueur au moment du stage pour pouvoir participer à la formation. Toute inscription reste définitive et due.

• Annulation exceptionnelle

En fonction de l'évolution de la situation sanitaire actuelle, Dynas+ Engineering Products se réserve le droit d'annuler une formation en présentielle si elle représente un risque pour ces employés.



• Moyens techniques et pédagogiques

Présentiel : La formation comprend un cours en présentiel accompagné d'un support au format papier et présenté via vidéoprojecteur. Elle s'accompagne généralement d'exercices réalisés sur ordinateur (fournis par Dynas+ Engineering Products sauf pour les formations sur site client) pour la bonne prise en main du logiciel. Un cahier d'exercices au format papier est dans ce cas également fourni. Certaines formations, réalisées par des experts externes, ne requièrent pas de matériel informatique et les exercices sont alors remplacés par des études de cas présentées directement par le formateur. A la fin de chaque formation, le stagiaire peut récupérer son travail numérique sur son matériel propre.

Visio-conférence : La formation comprend un cours en visio-conférence accompagné d'un support au format électronique protégé par mot de passe envoyé par email au préalable. Elle s'accompagne généralement d'exercices réalisés sur ordinateur pour la bonne prise en main du logiciel. Un cahier d'exercices au format électronique est dans ce cas également fourni et les mises en données correspondantes sont envoyées via une plateforme d'échange sécurisée. Le lien d'accès à l'outil WebEx pour la visio-conférence est transmis directement aux stagiaires avant le début de la formation.

• Modalités d'évaluation du stagiaire

L'assiduité du stagiaire est contrôlée via la signature d'une feuille de présence, par demi-journée de formation. De plus, afin d'évaluer sa progression, une feuille d'évaluation initiale est remplie par le stagiaire en début de formation et une feuille d'évaluation formateur ainsi qu'une feuille d'évaluation des exercices (le cas échéant) sont remplies par le formateur en fin de formation. A la demande du stagiaire celui-ci peut recevoir une attestation de formation sous réserve qu'il ait rempli toutes ses obligations.

• Modalités d'évaluation de la formation

A la fin de chaque formation il est demandé au stagiaire de remplir une feuille d'évaluation formation visant à évaluer la qualité de nos formations et à l'améliorer si besoin est (niveau pédagogique du formateur, matériel et support de la formation...).

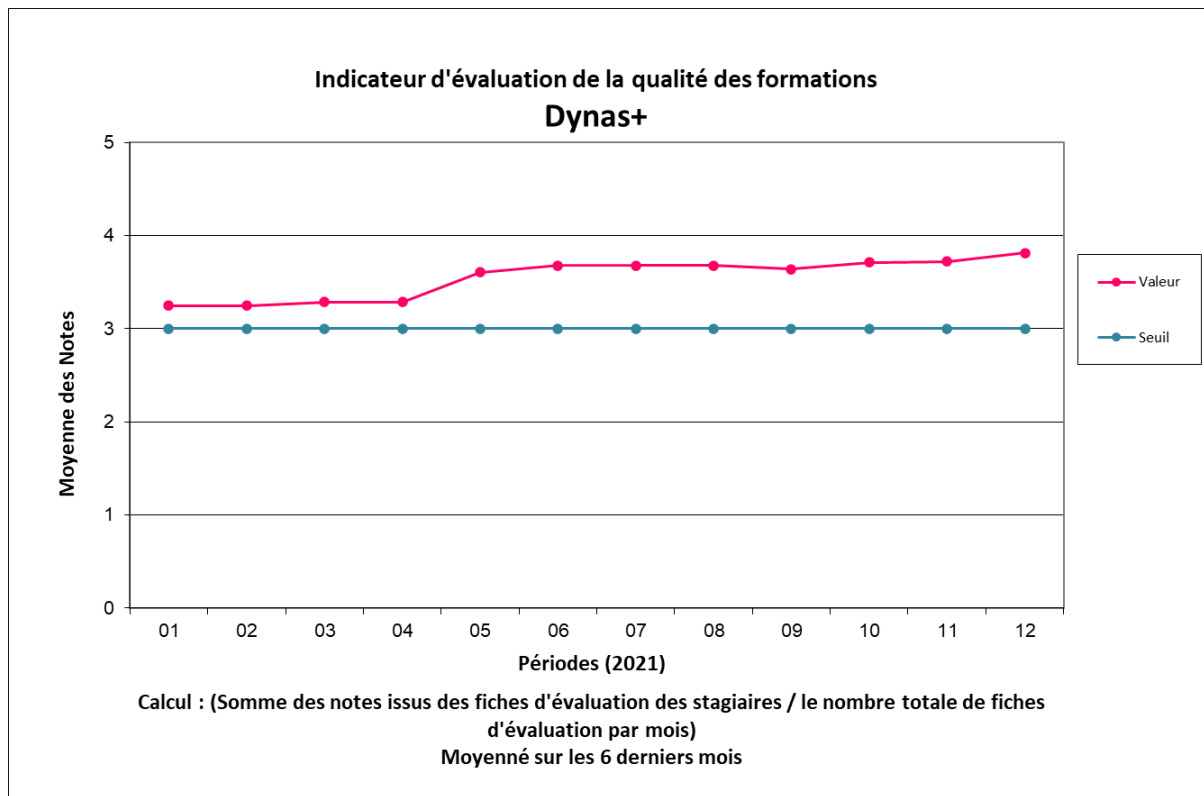


• Indicateur qualité

Suite à chacune des formations dispensées par Dynas+ Engineering Products les stagiaires remplissent une « Fiche d'évaluation formation » permettant à Dynas+ d'évaluer la qualité de la formation. Un indicateur, basé sur cette fiche, permet de retranscrire le niveau de satisfaction du client. 7 critères sont considérés : Le niveau technique du formateur, le niveau pédagogique du formateur, la qualité de la progression du cours, la qualité du support du cours, la qualité des exercices, la qualité du matériel, la qualité de l'organisation de la formation.

Une note entre 1 et 4 est attribuée à chacun de ces critères (4 étant la meilleure note). L'indicateur reprend l'ensemble des notes des formations et en fait la moyenne sur les 6 derniers mois. L'objectif est d'être supérieur ou égal à 3 sur l'ensemble de l'année.

La figure ci-dessous présente les résultats de l'indicateur qualité formation sur l'année 2022:








INFORMATIONS PRATIQUES



• Adresse

 5 avenue Didier Daurat
31400 Toulouse

• Contact

 formations@depeurope.com
 +33 (0)5 61 44 54 98



• En métro + bus








Téléchargez l'application 
Métro ligne  Direction : Ramonville - Arrêt : Faculté de Pharmacie
Puis Bus ligne  Arrêt : Clément Ader

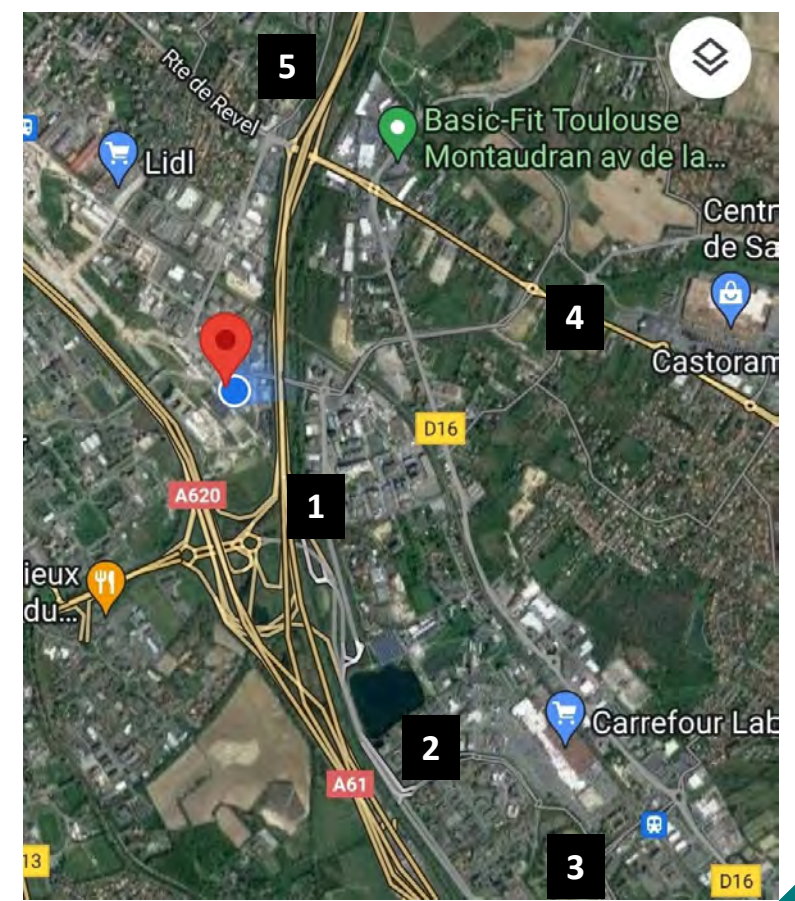
• En avion

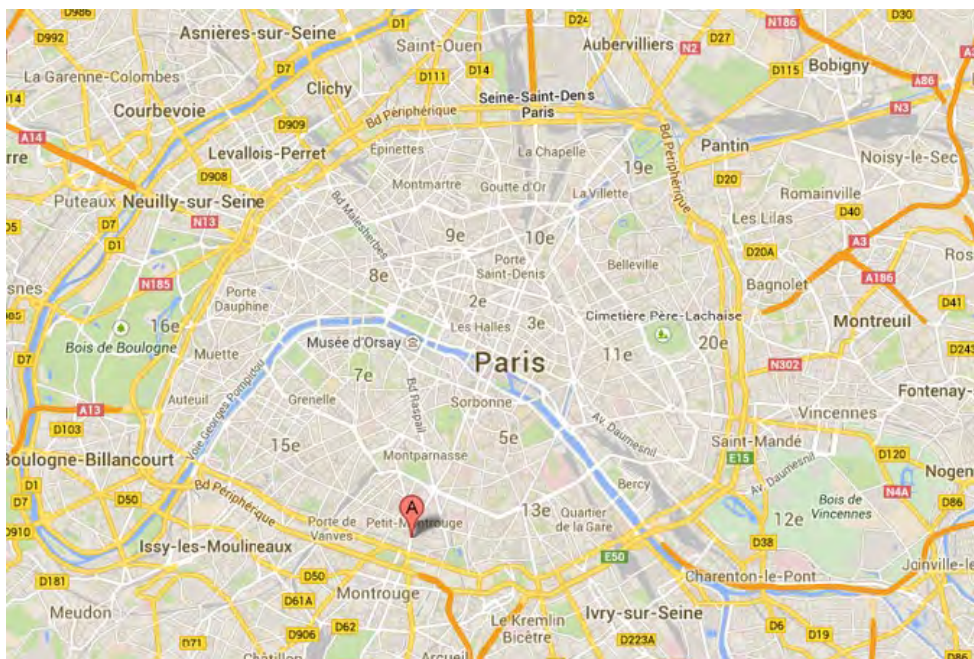
Taxi recommandé depuis l'aéroport Toulouse Blagnac (20 - 30 € environ).

• En voiture


Parking gratuit à côté de l'agence (16 min depuis l'aéroport Blagnac - 17 km).

-  **1 - Hôtel Ariane** ★★★★★
 30 rue des Cosmonautes 31400 TOULOUSE - ☎ 05 61 34 06 05 BUS **78** - 8 min
 Distance : 0.8 km - Site web : <http://www.hotelariane.com/>
-  **2 - Hôtel Ibis Style** ★★★★★
 120 rue Garance 31677 LABÈGE - ☎ 05 61 39 06 68 BUS **79** - 25 min
 Distance : 2.2 km - Site web : <https://all.accor.com/hotel/A0A2/index.fr.shtml>
-  **3 - Hôtel Le Sextant** ★★★
 443 rue Découverte 31670 LABÈGE - ☎ 05 61 39 27 27 BUS **79** - 30 min
 Distance : 3.0 km - Site web : <http://www.hotelsextant.com/>
-  **4 - Hôtel Gril Campanile** ★★★★★
 342 rue Découverte 31670 LABÈGE - ☎ 05 61 39 83 83 BUS **79** - 30 min
 Distance : 3.0 km - Site web : <https://toulouse-sud-labege-innopole.campanile.com/fr-fr/>
-  **5 - Hôtel La Quietat** ★★★★★
 203 Route de Revel, 31400 TOULOUSE - ☎ 05 62 47 86 86 BUS **80** - 5 min
 Distance : 1.9 km - Site web : <http://http://www.hotel-la-quietat.fr/fr/>
-  **6 - Hôtel Ibis Style** ★★★★★
 21 avenue Marcel Dassault 31500 TOULOUSE - ☎ 05 61 80 18 01 BUS **37** - 8 min
 Distance : 1.7 km - Site web : <https://all.accor.com/hotel/7476/index.fr.shtml>
-  **Centre ville - Hôtel Ours Blanc** ★★★
 14 place Victor Hugo 31000 TOULOUSE - ☎ 05 61 21 25 97
 Distance : 9.5 km - Site web : <http://www.hotel-oursblanc.com/index.php>






• **Adresse**

 99bis Avenue du général Leclerc
74014 PARIS

• **Contact**

 formations@dynasplus.com


 +33 (0)5 61 44 54 98

• **En métro**

 Station « Alésia » ou « Porte d'Orléans »



• **En tramway**

 Station « Porte d'Orléans »



• **En avion**

Taxi recommandé depuis les aéroports Orly et Roissy CDG (30 - 40 € environ)



CONTACTEZ NOUS

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SUPPORT

support@depeurope.com

FORMATION

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email@depeurope.com