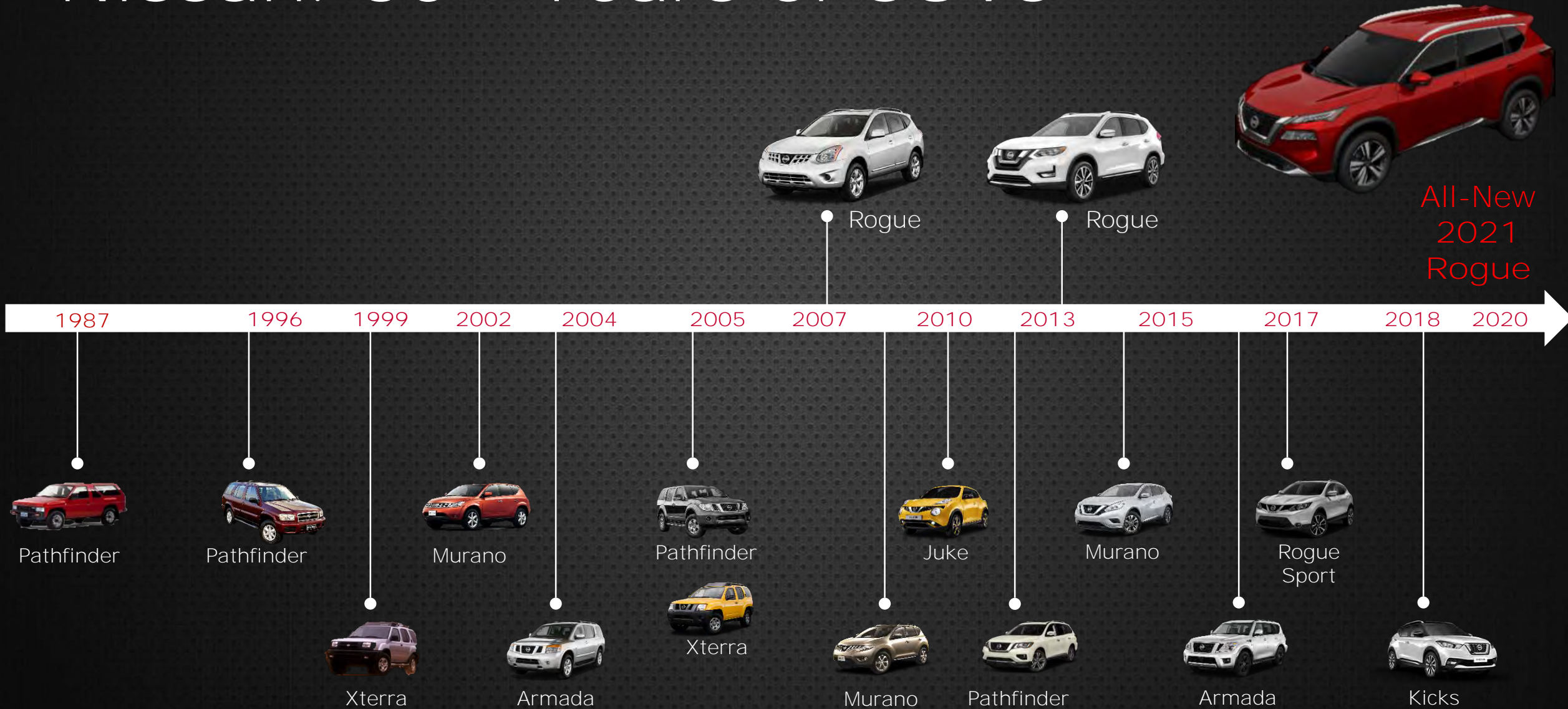


All-New

Nissan Rogue



Nissan: 30+ Years of SUVs



New Rogue:
THE CONCEPT



Rogue Product Concept

MODEL Promise

*Right sized family
versatile SUV
w/ sense of Premium-ness*

STRATEGIC ADVANTAGE

*Thoughtful Safety CSUV
with 2nd row functionality*

X

THOUGHTFUL SAFETY & ASPIRATIONAL

**SUV has Modern Strength
w/ Premium-ness & Family focused Functionality**

Concept Realizers

**“All Around”
SAFETY**

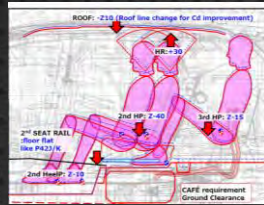
**FUNCTIONALITY 2nd
Row focused w/
EMOTIONAL Interior**

**Aspirational &
Modern Strength
Design**

STYLE AND FLEXIBILITY
FOR UP TO 7

BIW CONTRIBUTION TO Rogue TARGETS

INNOVATIVE & EFFICIENT PACKAGING : Improved roominess with enhanced stance & Fuel Efficiency

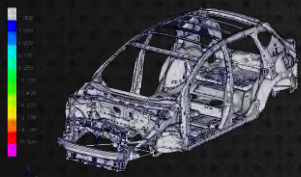


Increased cabin roominess

Weight reduction for improved fuel efficiency



PREMIUM & ADVANCED FEELING : Premium & secure driving experience without compromising quality



Increased stiffness for improved dynamics and reduced road noise



A-PLR section & layout to maximise front visibility



Segment best RR door opening for improved comfort



Top crash performance for secure driving

STRIKING & ATTRACTIVE DESIGN : Dynamic stance with premium and high quality feel

Sharp metal lines for dynamic & sleek appearance



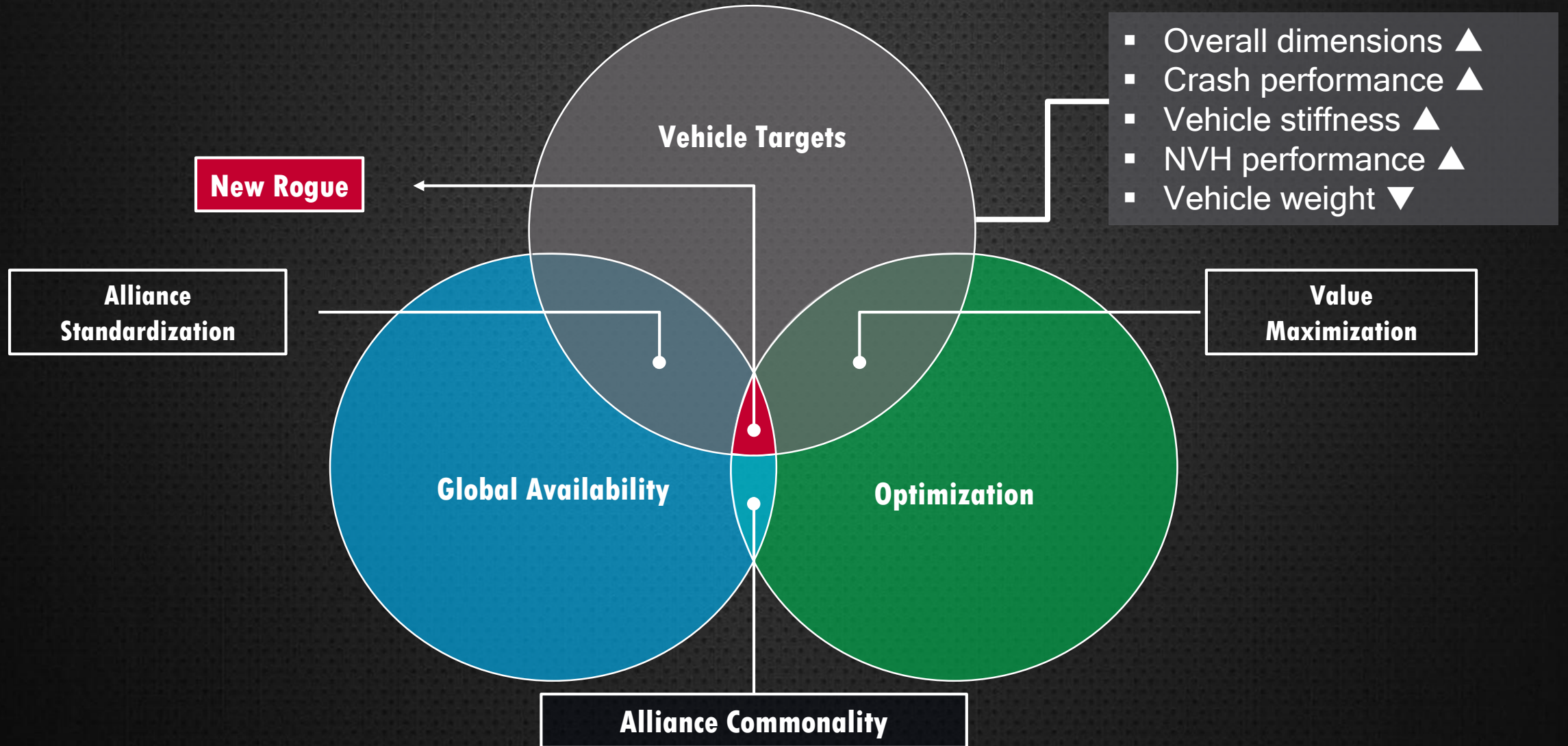
Optimizing Aerodynamics

- Reduced wind noise
- Cd total improvement: 5%



Rogue BODY DESIGN PHILOSOPHY

To develop the BIW by leveraging the Alliance in order to achieve maximum customer value



New Rogue:
THE ACHIEVEMENT

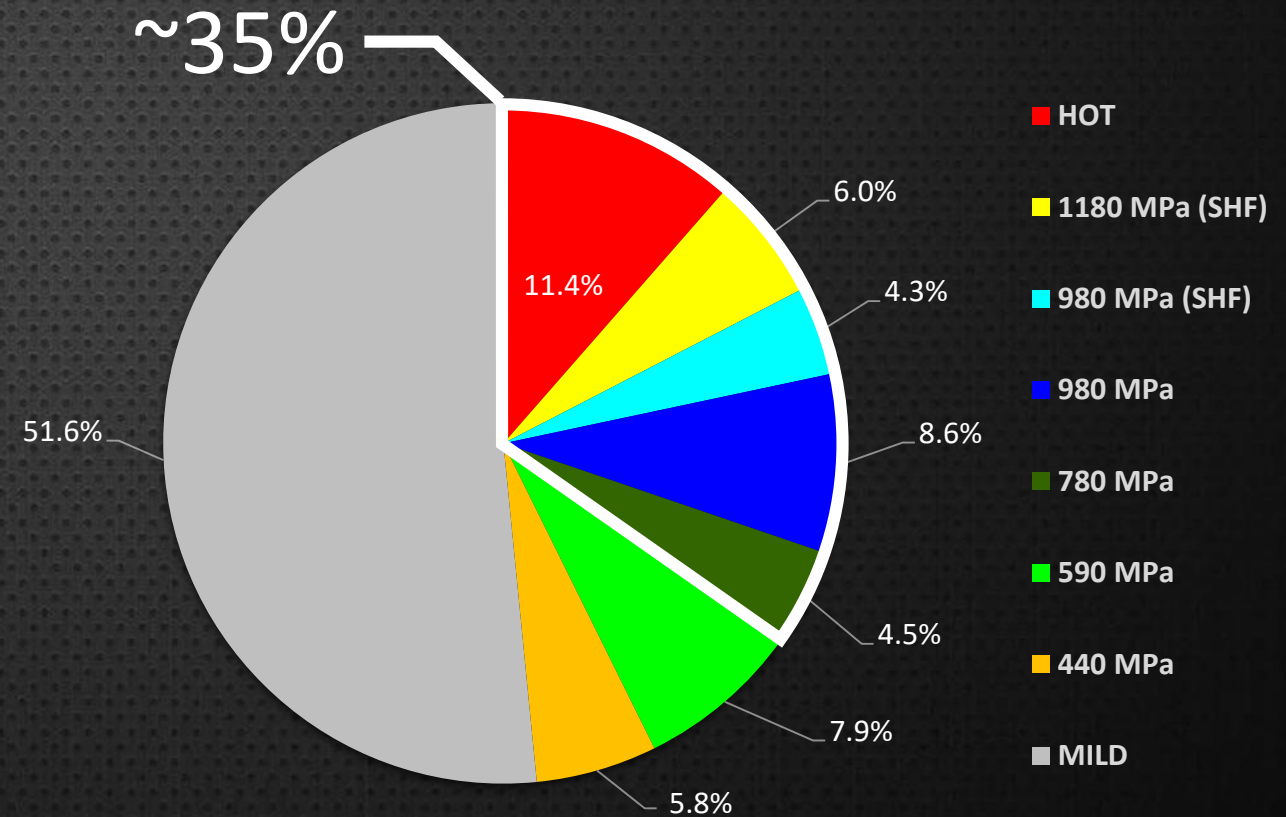
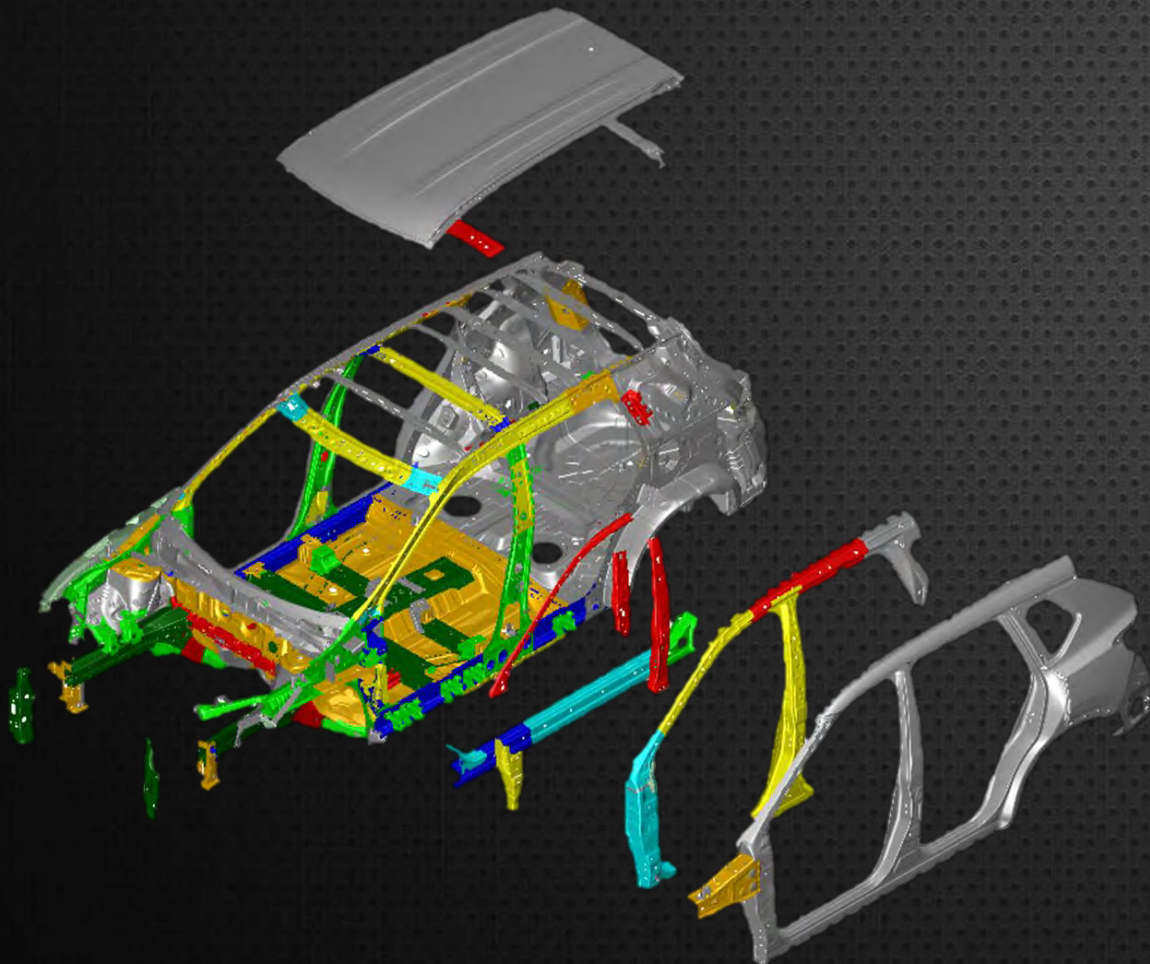


Rogue BIW – Steel Usage

□ Maximize AHSS with well balanced global deployment

SHF980&1180*, Nissan core technology, is applied to upper body pursuing weight saving & crash performance improvement .

*Super High Formable Advanced High Strength Steel



Rogue Platform – Steel Usage

□ Maximize AHSS with well balanced global deployment

1. AHSS selection with well consideration for global deployment.

Now being used at 9 manufacturing locations across multiple countries within the alliance.

2. Well balanced Hot stamping and cold stamping selections on PF for top safety performance.



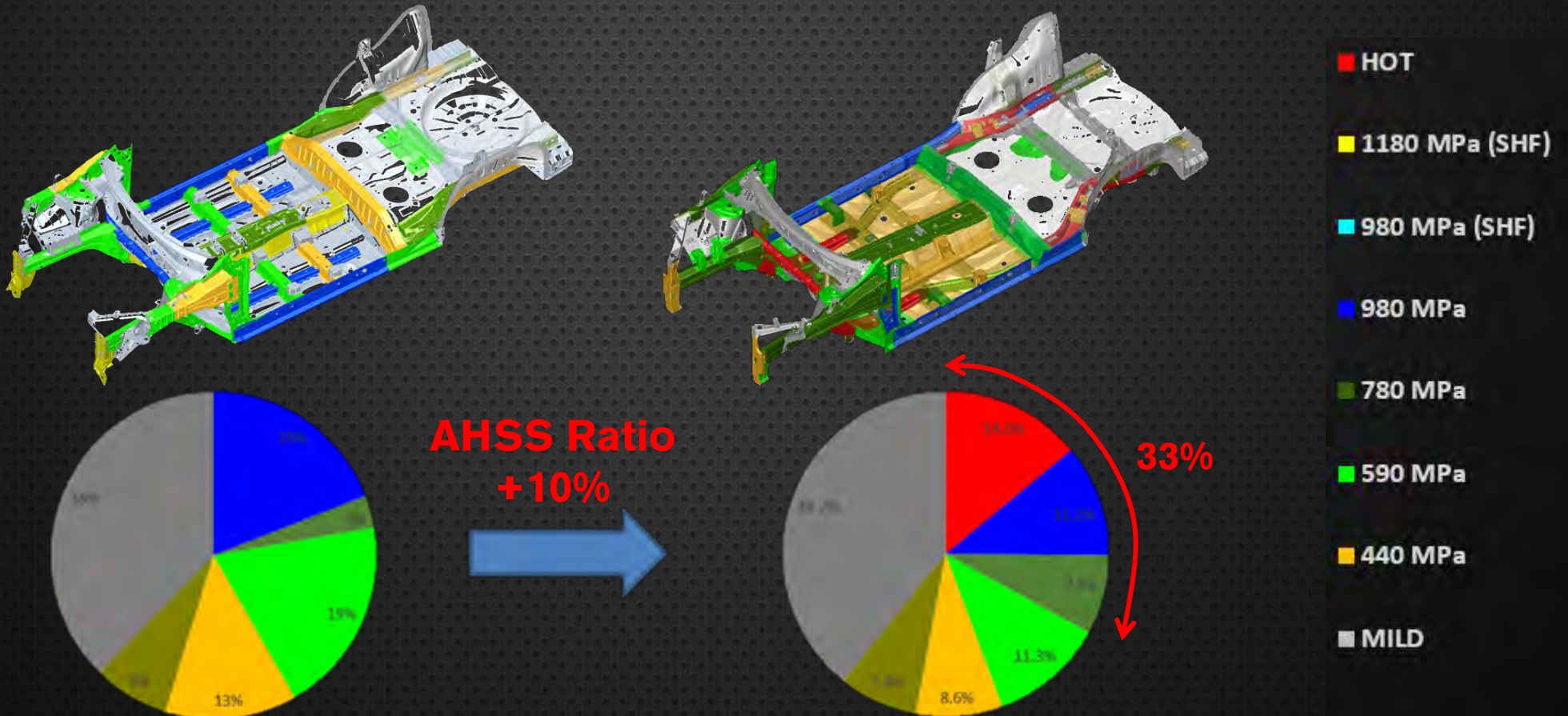
Rogue Platform – Steel Usage

□ Maximize AHSS with well balanced global deployment

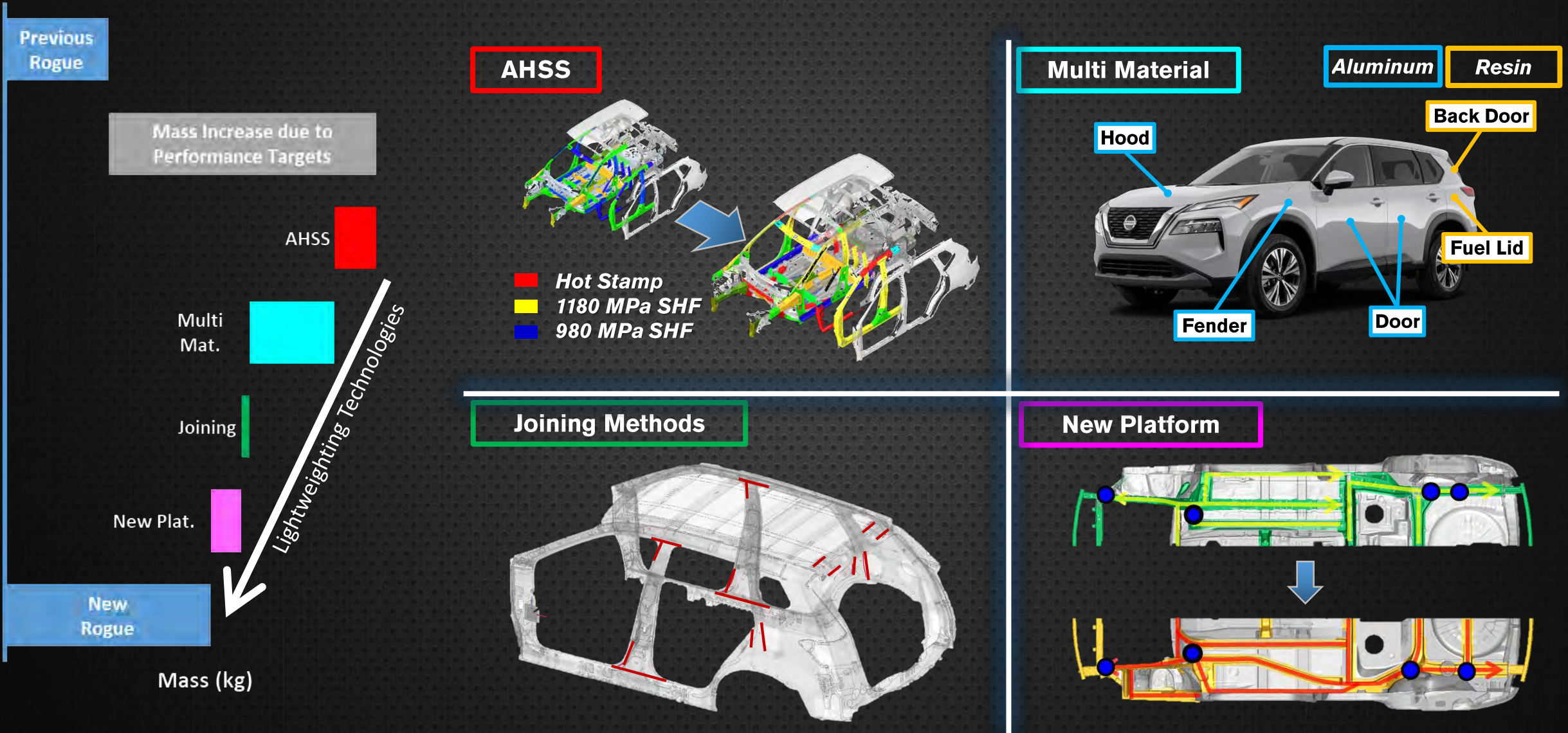
1. AHSS selection with well consideration for global deployment.

Now being used at 9 manufacturing locations across multiple countries within the alliance.

2. Well balanced Hot stamping and cold stamping selections on PF for top safety performance.



Lightweighting Technologies



Safety Performance

□ Rogue achieved IIHS Top Safety Pick+

2021 TOP SAFETY PICK+

2021 Nissan Rogue

2022 TOP SAFETY PICK+

2022 Nissan Rogue



Individual IIHS Test Modes (2021)

Moderate Overlap
Crash Test



Small Overlap
LH/RH Crash Test



Side Impact
Crash Test



Roof Crush
Test



Whiplash
Test



Headlight
Test



Crash Prevention
Test

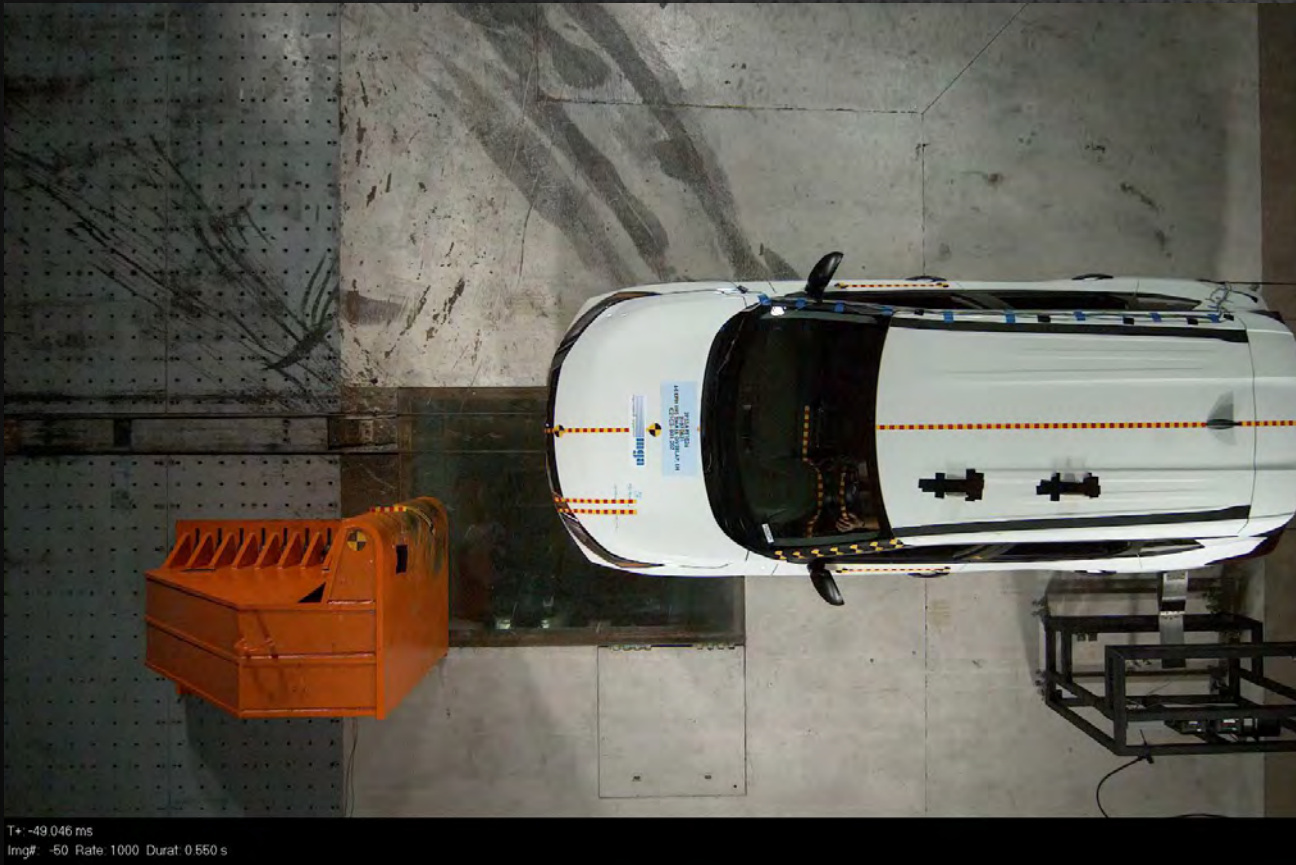


Pedestrian Crash Avoidance
Front- 2020



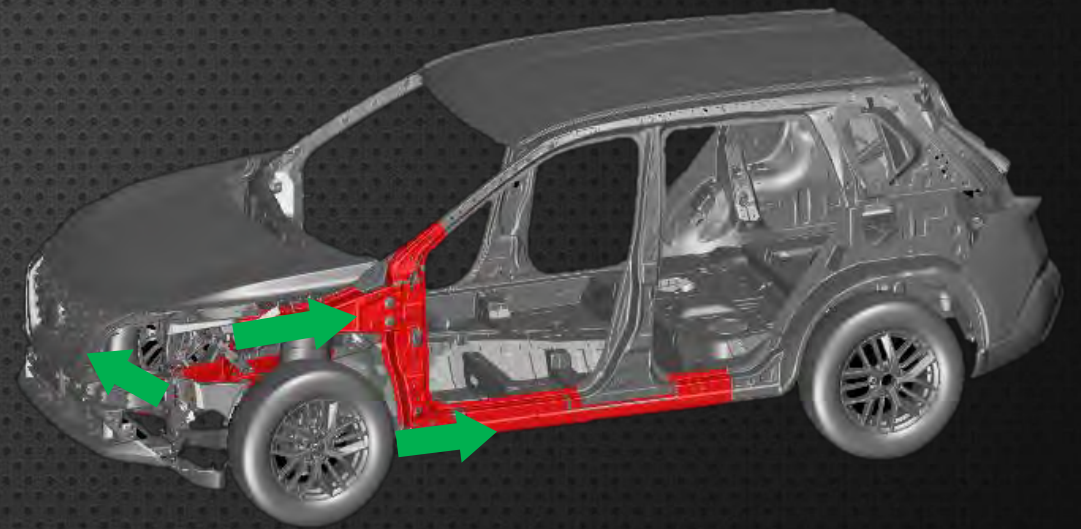
40mph Small Overlap

- ❑ Structure optimized to reduce mass and increase strength



T+ -49 046 ms
Img# -50 Rate 1000 Durat 0.550 s

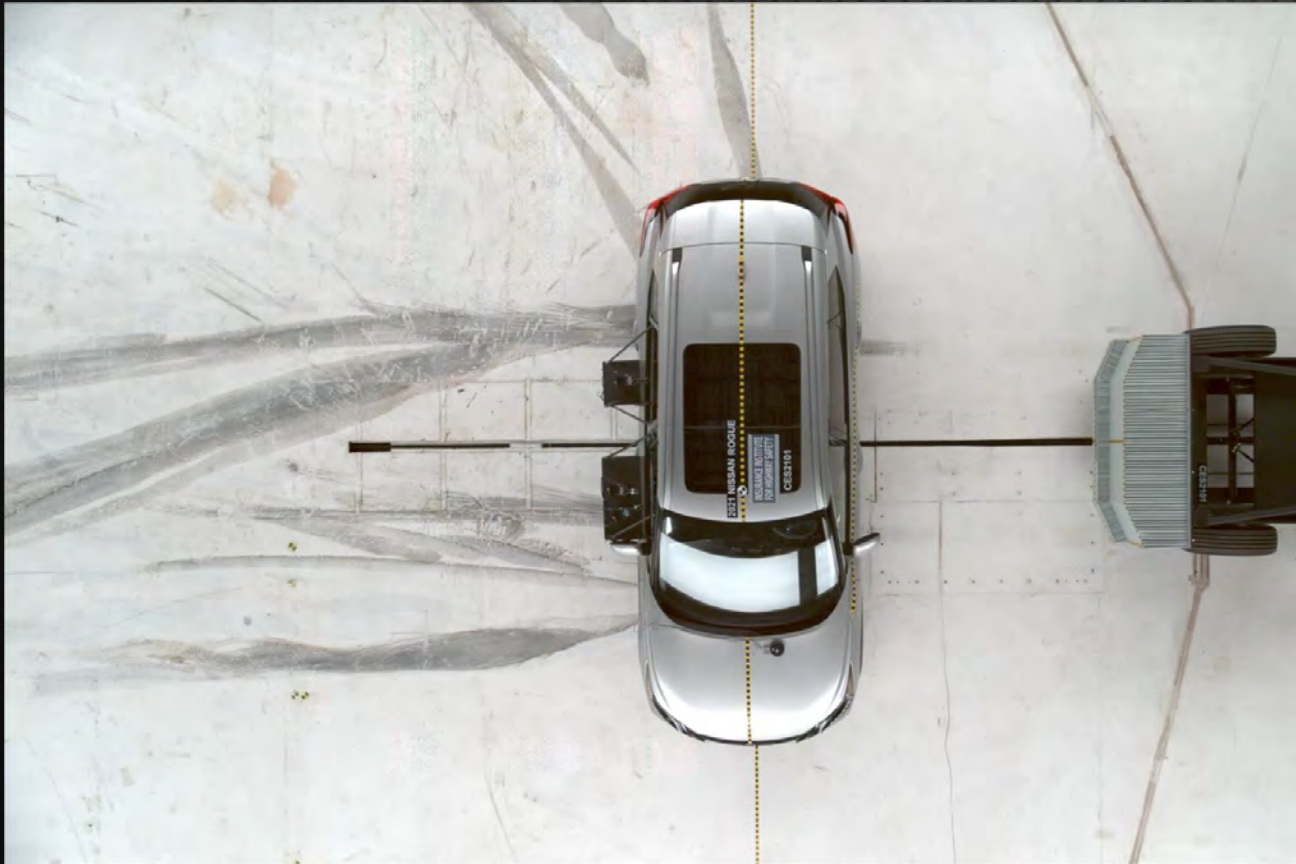
Optimized body structure



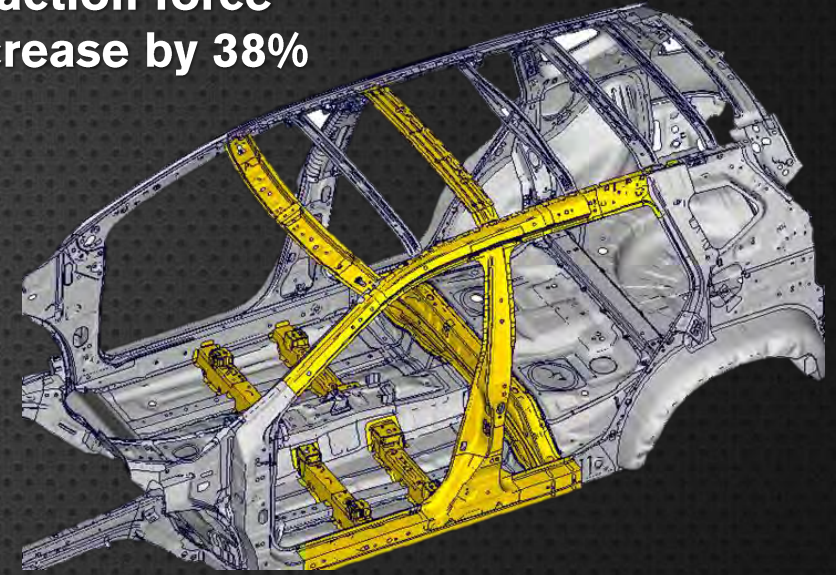
**Reaction force
increase by 9.7%**

37mph Side Impact

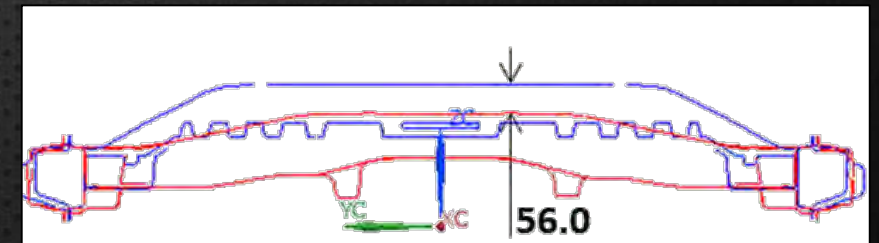
- Structure optimized to reduce mass and increase strength



**Reaction force
increase by 38%**

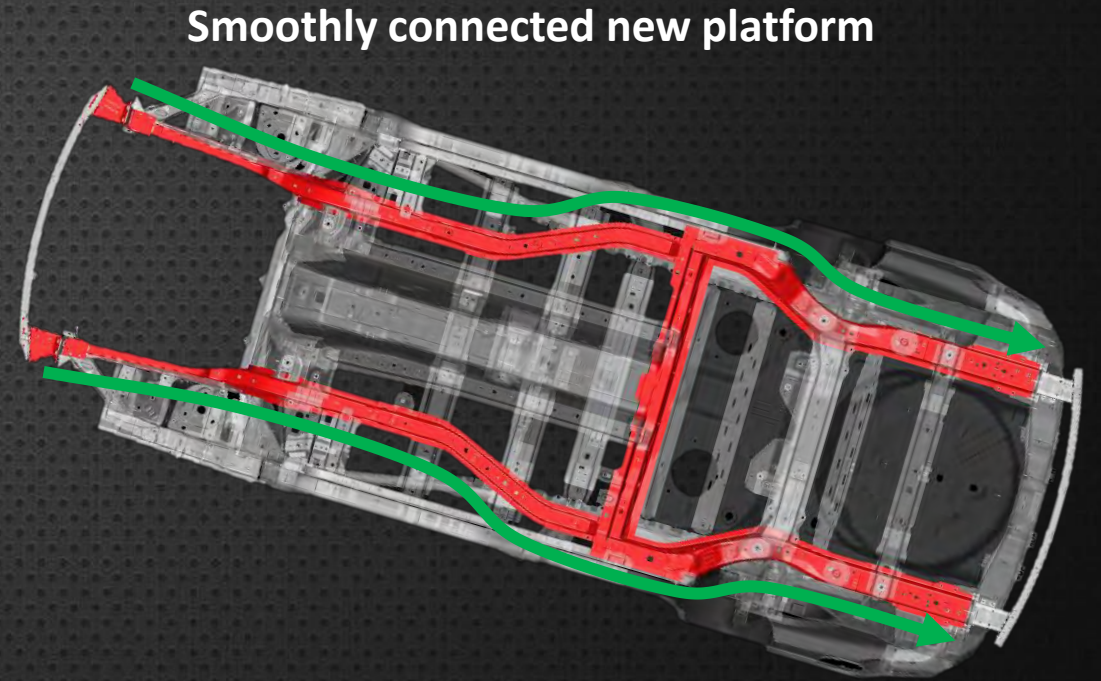


More direct cross car loading



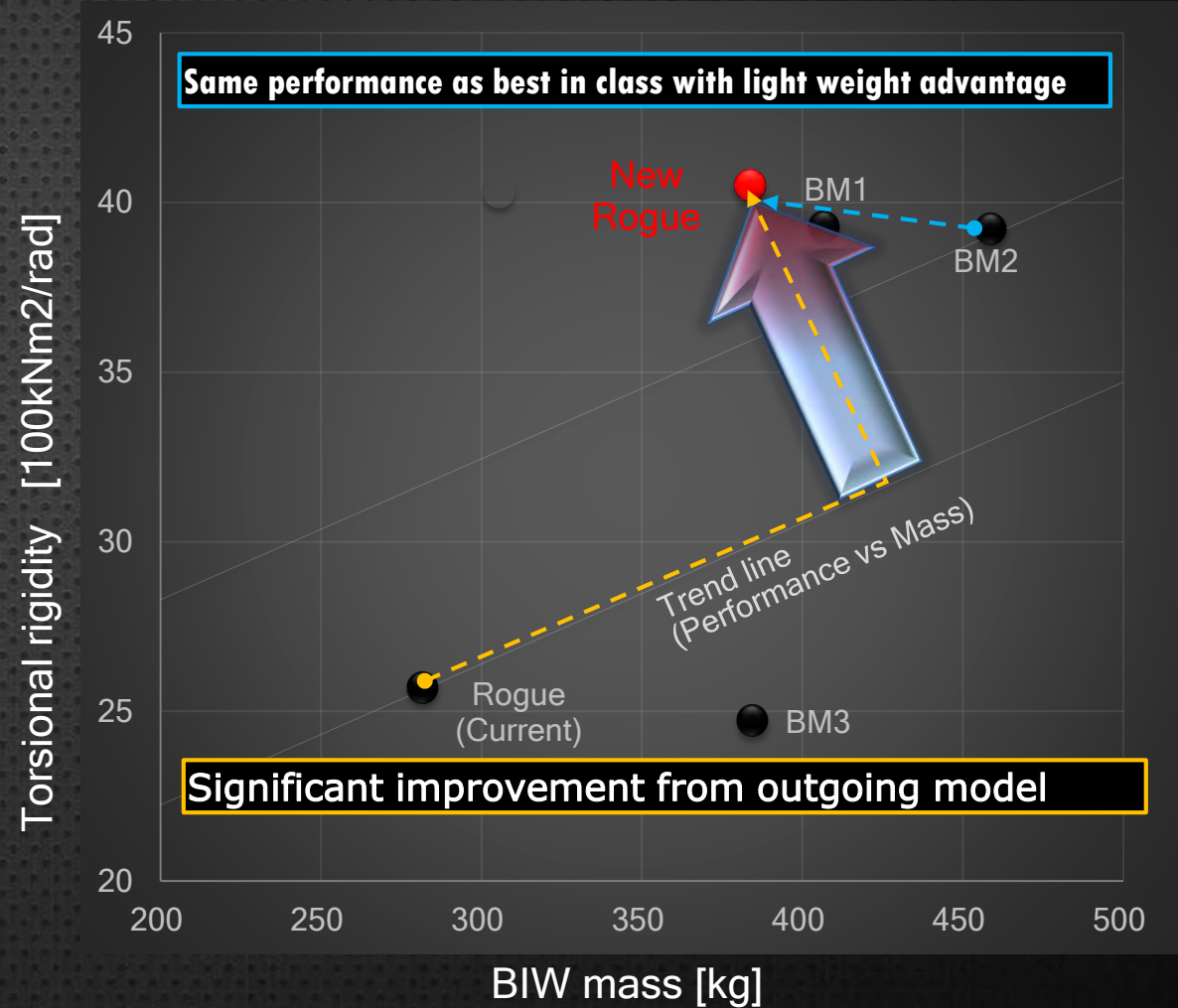
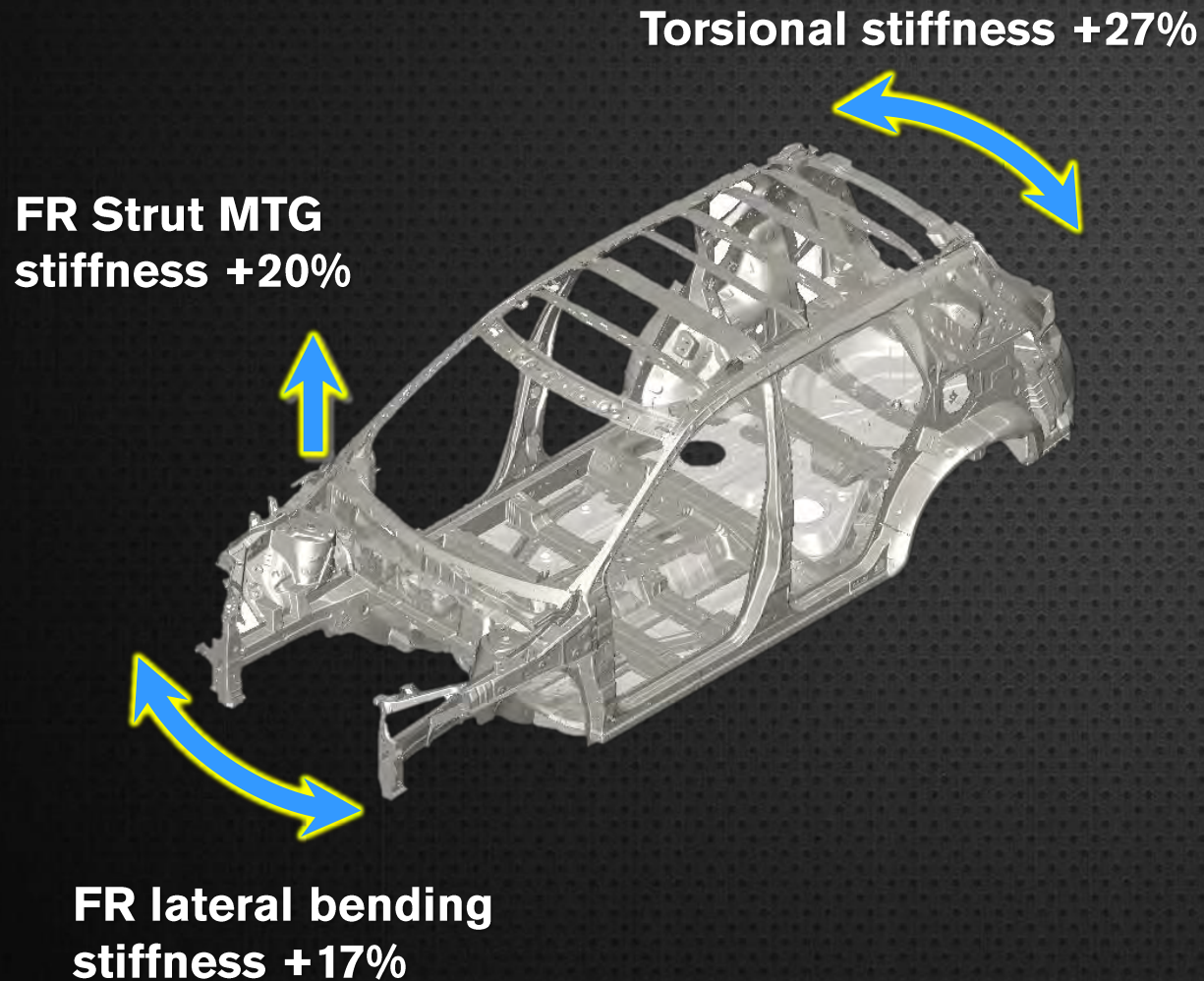
56mph Offset Oblique Impact

- Smoothly connected platform for axial load distribution



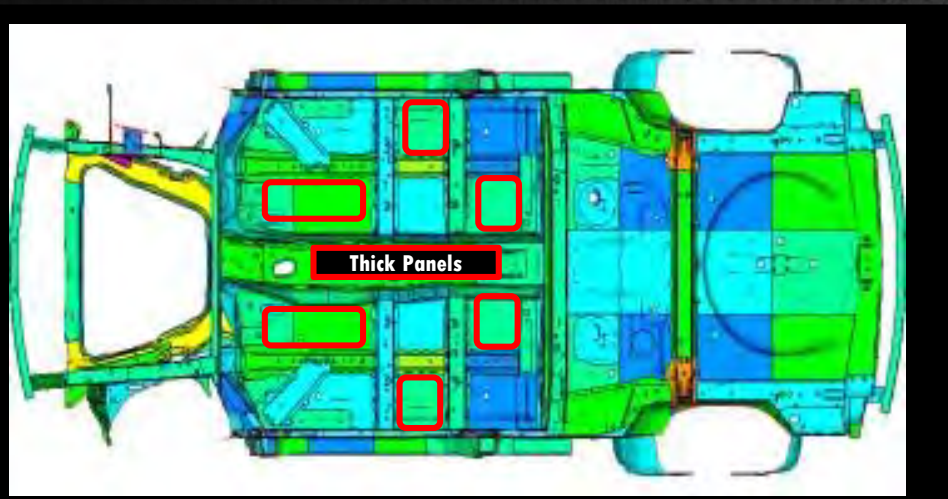
Stiffness Improvement

New platform and upper body design provides improved Stiffness resulting in better dynamic performance and noise reduction

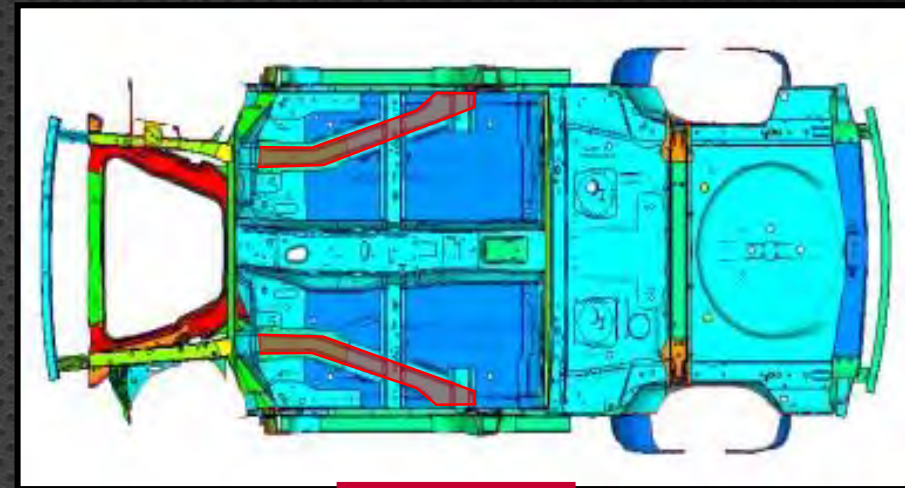


Floor Stiffness Improvement

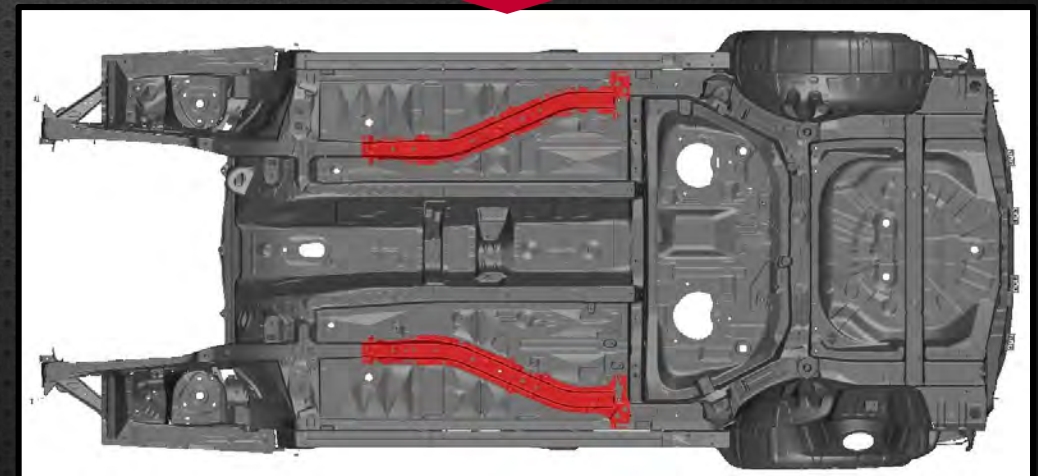
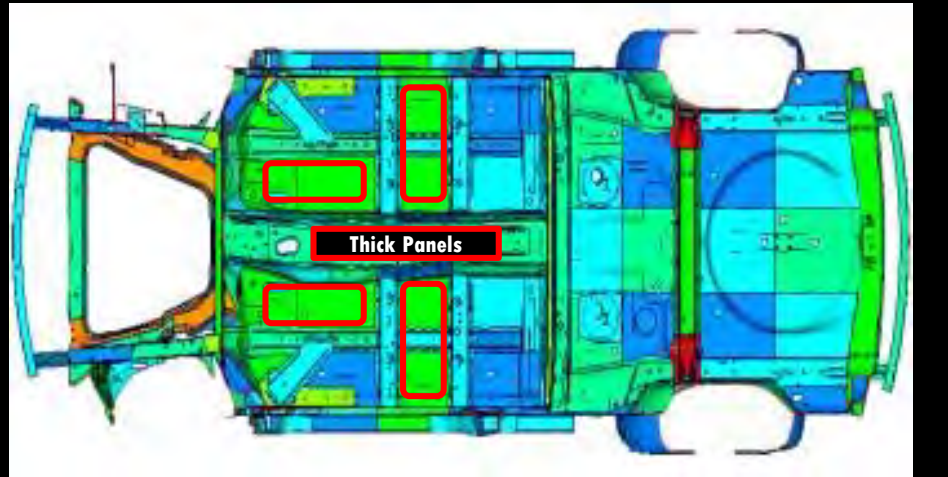
Based on the result of the cluster analysis, the platform structure was studied to find the most optimum layout of the Floor members



Re-model



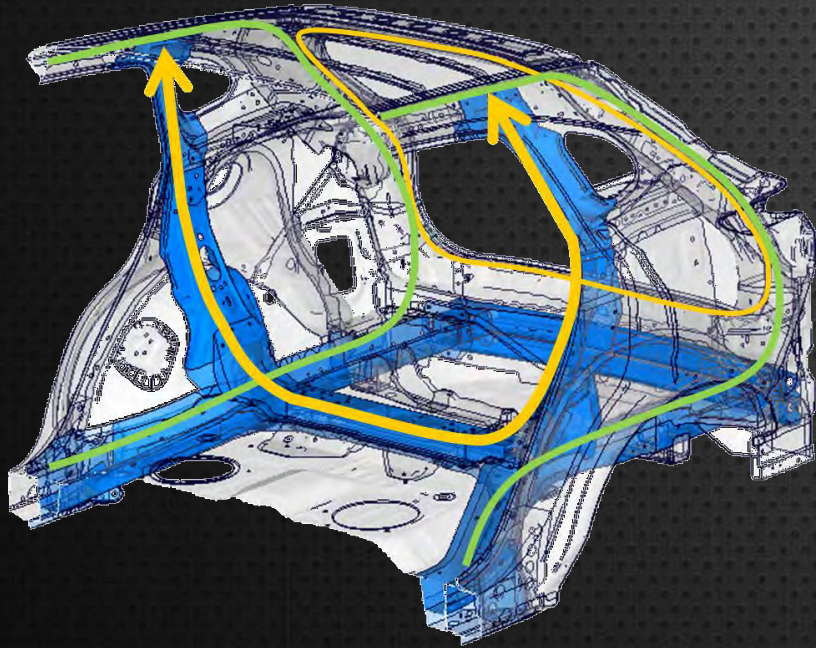
Finalized



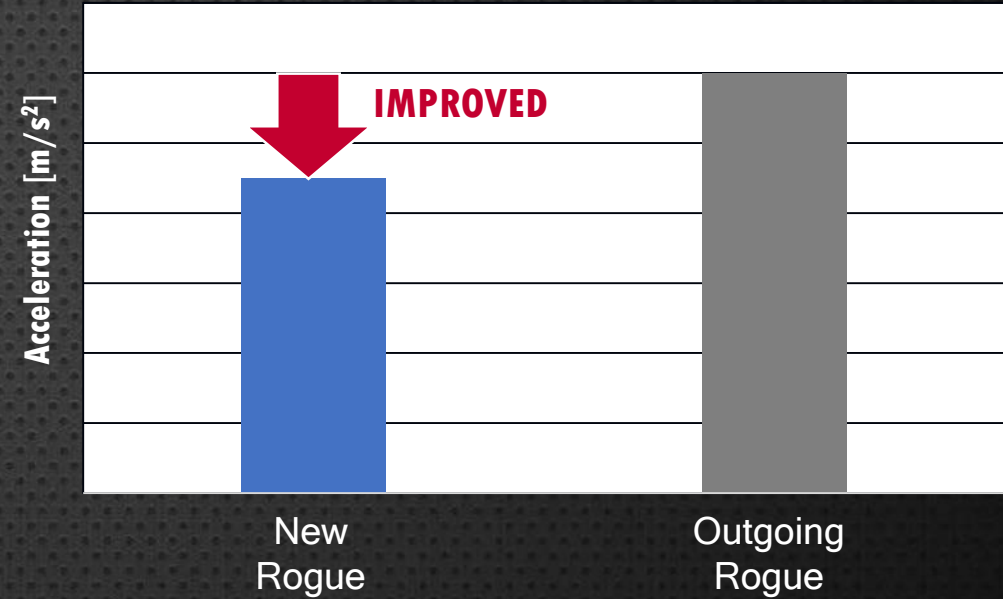
Rear Body Stiffness Improvement

Smooth & Connected Body structure in Rear provides improved solid structure feel

Ring structure in Body including floor structure

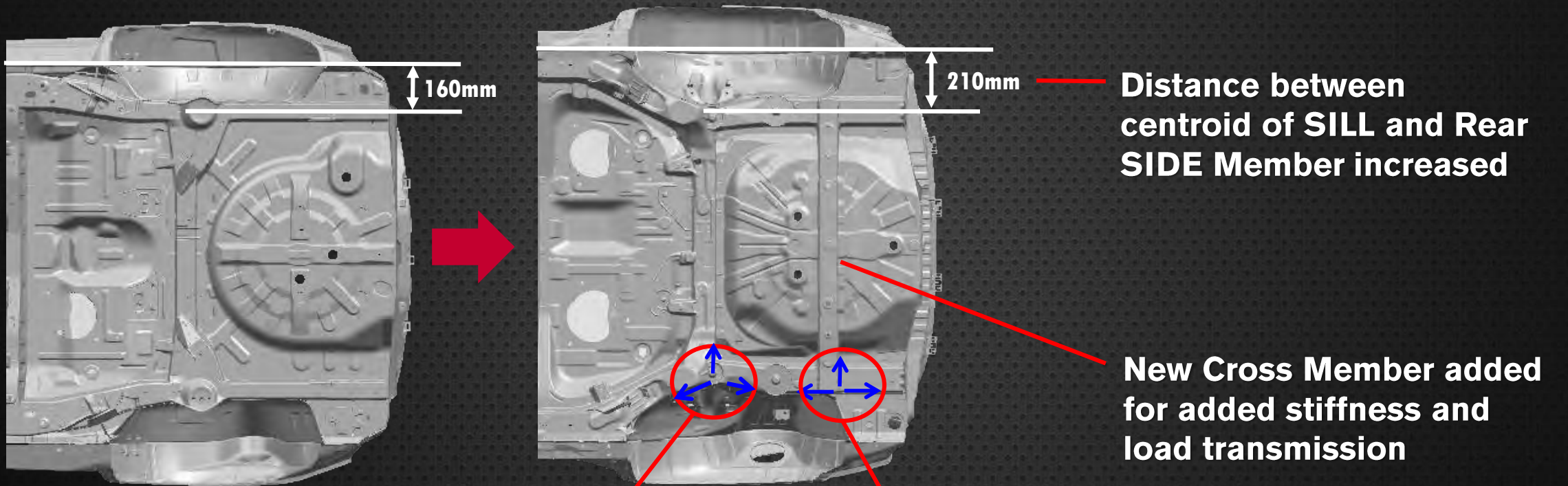


Impact shock



Load Transmission Improvement

Rear FLOOR optimized to compensate for increased tire width impact on load transmission



Smooth connection from Rear Cross Member towards the Rear Suspension mounting surface and Rear Side Member

RR Suspension mounting point is at center of Rear Side Member and Cross Member section

New Rogue:
KEY ELEMENTS

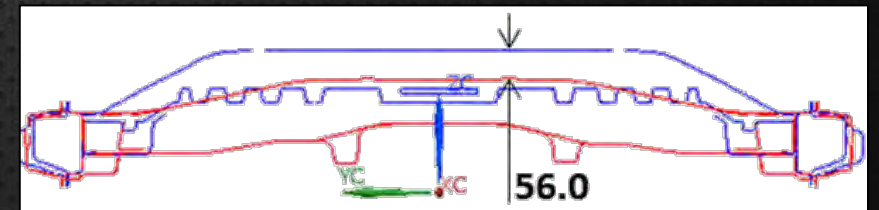
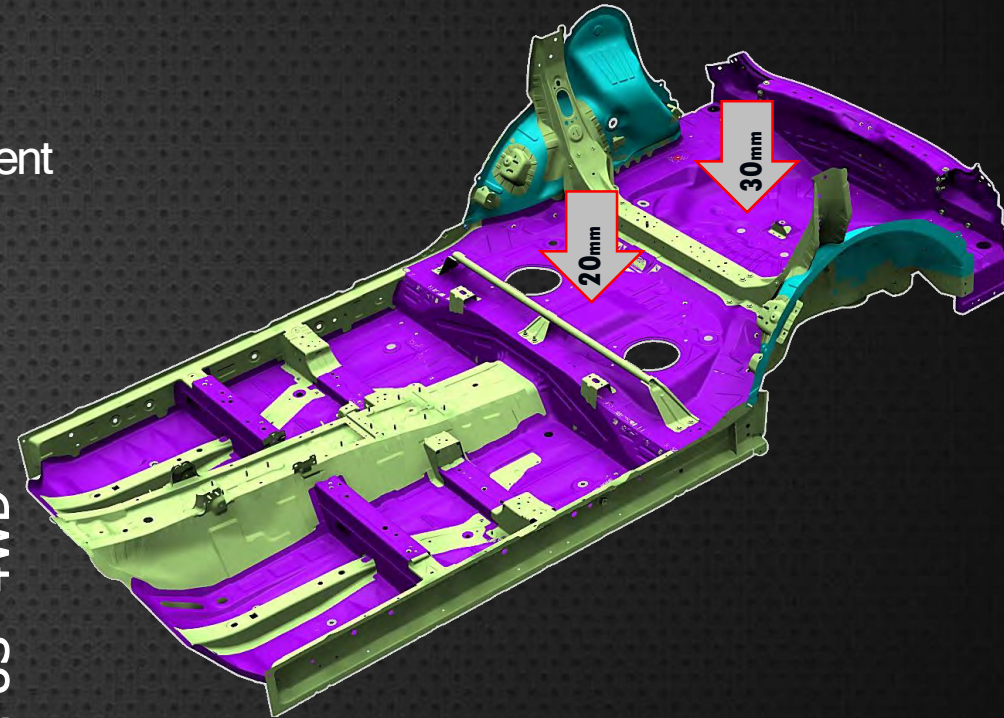
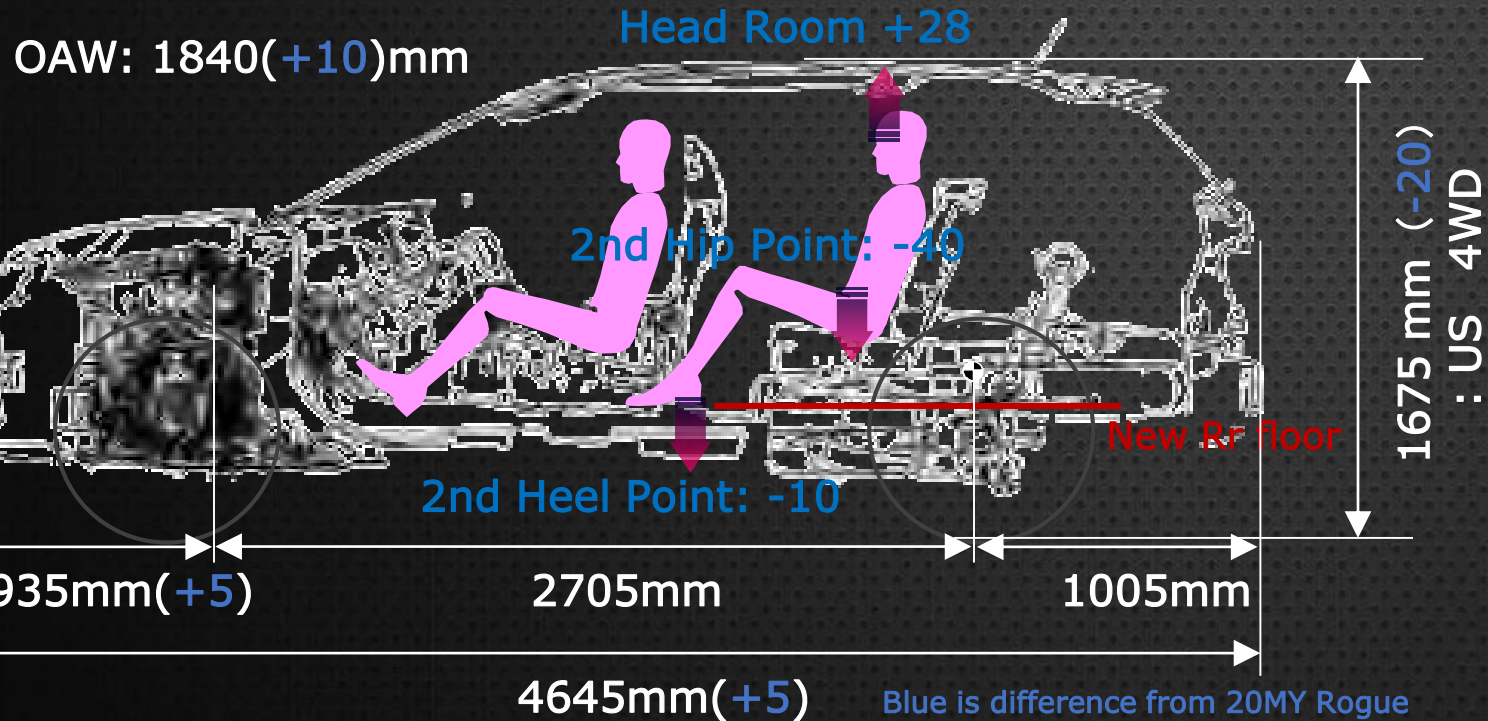


INCREASED CABIN ROOMINESS

New Platform designed to improved cabin roominess within compact vehicle dimensions

New Floor designed for cabin space improvements:

- New Rear Seat Cross Member for passenger for ingress/egress improvement
- New Lower Rear Floor for seating comfort and luggage space

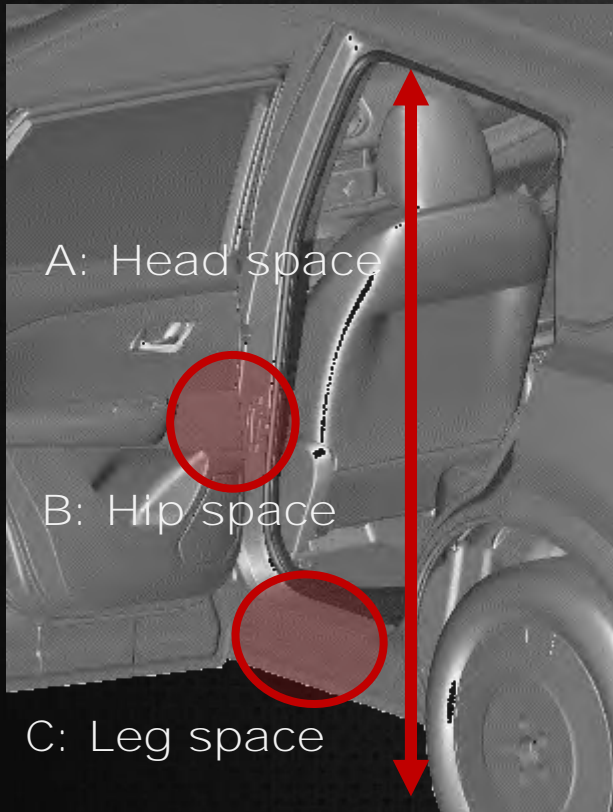
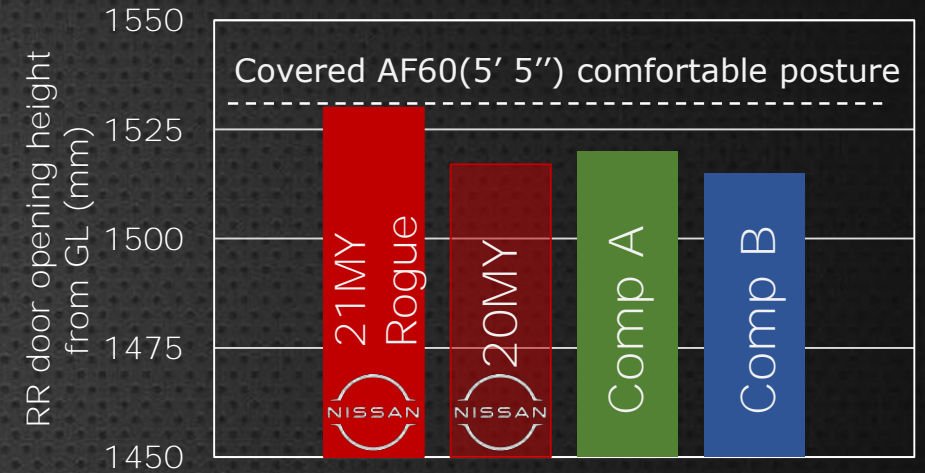


— Previous Rogue
— New Rogue

Baby & Child Loading

- ❑ Improved access

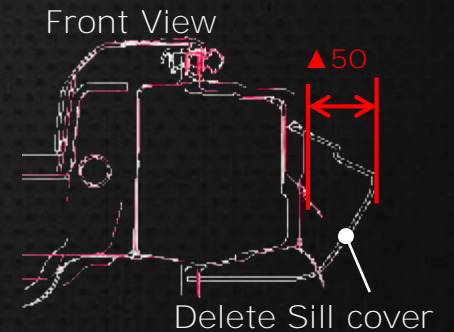
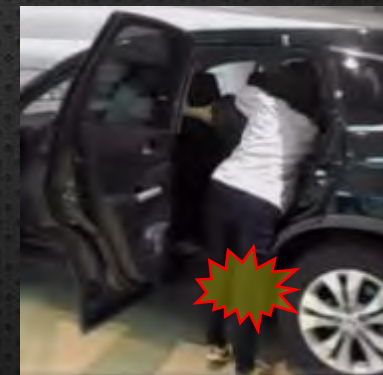
A: Head space
Top level RR DOOR opening height.



B: Hip space
Door armrest cut out
21MY

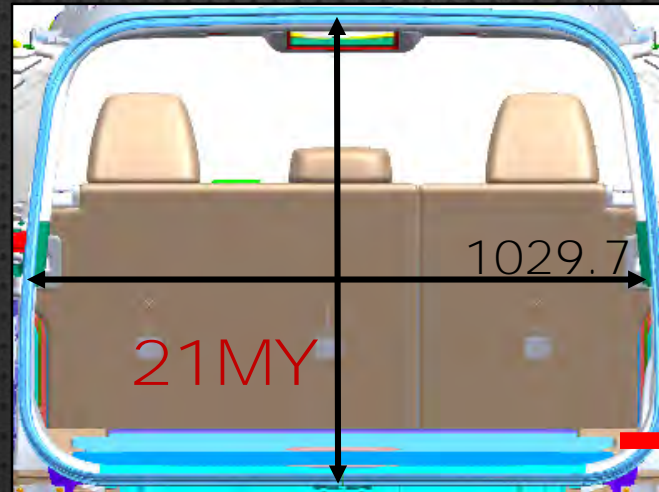
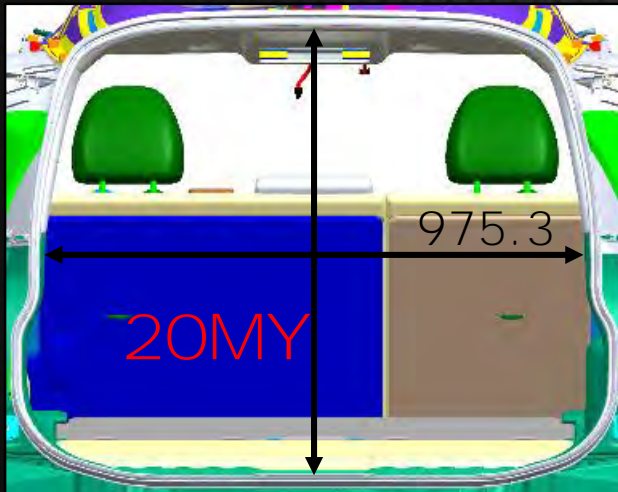


C: Leg space
Delete sill cover.



Cargo Room Opening

- ❑ Increased width and squared off opening
- ❑ Flat load floor from luggage room & folded 2nd row seats



Target storage item: 1 gallon milk/water jug

2nd Row Seatback = 4 deg



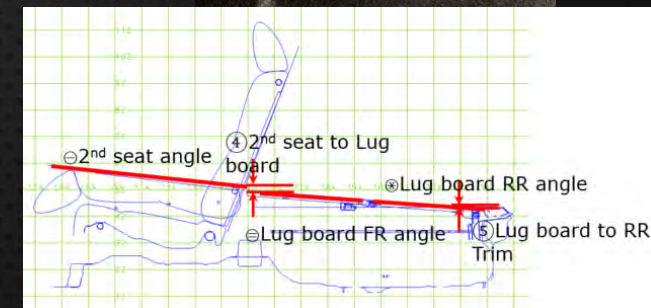
Inner Lugg Board = 5 deg



Outer Lugg Board = 3 deg



	21MY	20MY
Maximum Opening Width(mm)	1146.3	1140.5
Minimum Opening Width(mm)	1029.7 ↑54.4mm	975.3
Opening Height(With Board)(mm)	795.5	795.2



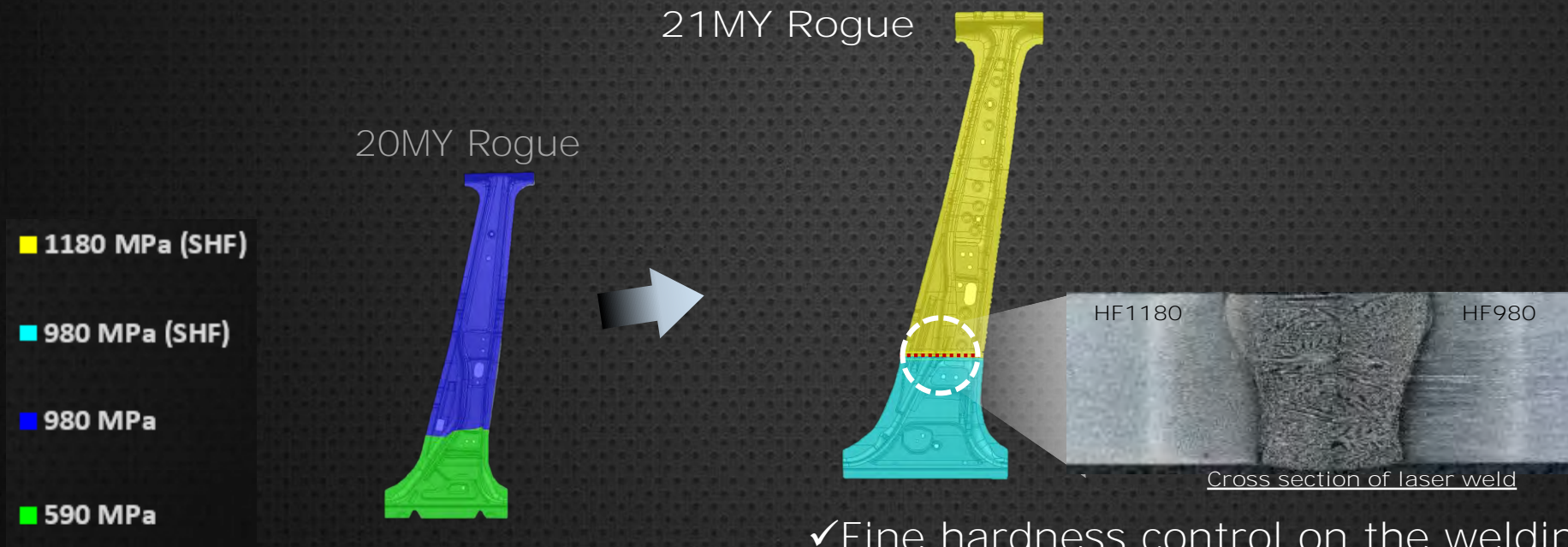
SHF980/1180 Application Tech – TWB*

*Tailor Welded Blank

□ World 1st SHF980+SHF1180 TWB adoption to B-PLR

1. Cold Stamping on SHF AHSS realizes integration tech comparable to Hot Stamping
2. Achieved high balanced Crash safety and light weight; -15% weight saving*

*Compared with conventional design of 590+980MPa TWB



- ✓ Fine hardness control on the welding bead for high alloyed steels
- ✓ Optimized section design for the formability

Special tech.
supported by

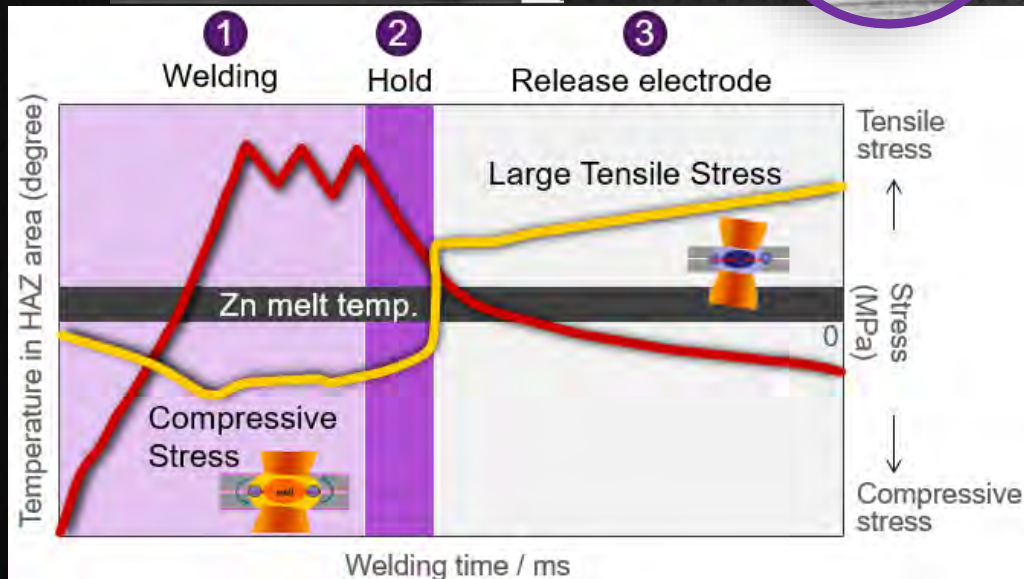
SHF980/1180 Application Technology

❖ Liquid Metal Embrittlement Control

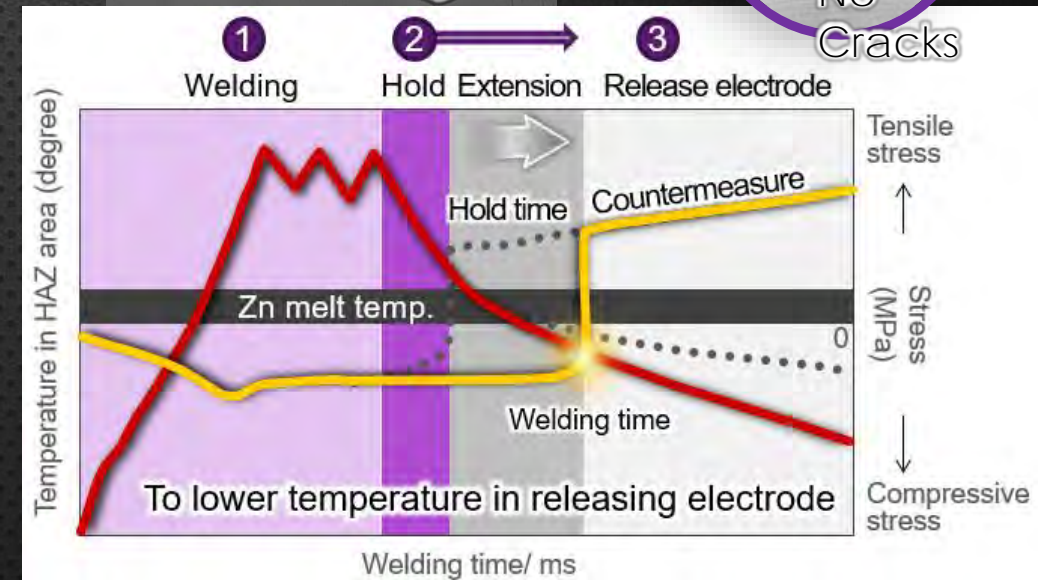
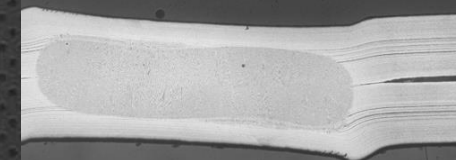
□ Fine controlled SPOT weld schedule to avoid LME

1. Appropriate Holding time extension to Zinc melting control
2. Tension stress reduce by fine weld gun/panel control
3. Set up design guideline for applicable stacks for SHF980 and SHF1180

Before Countermeasure



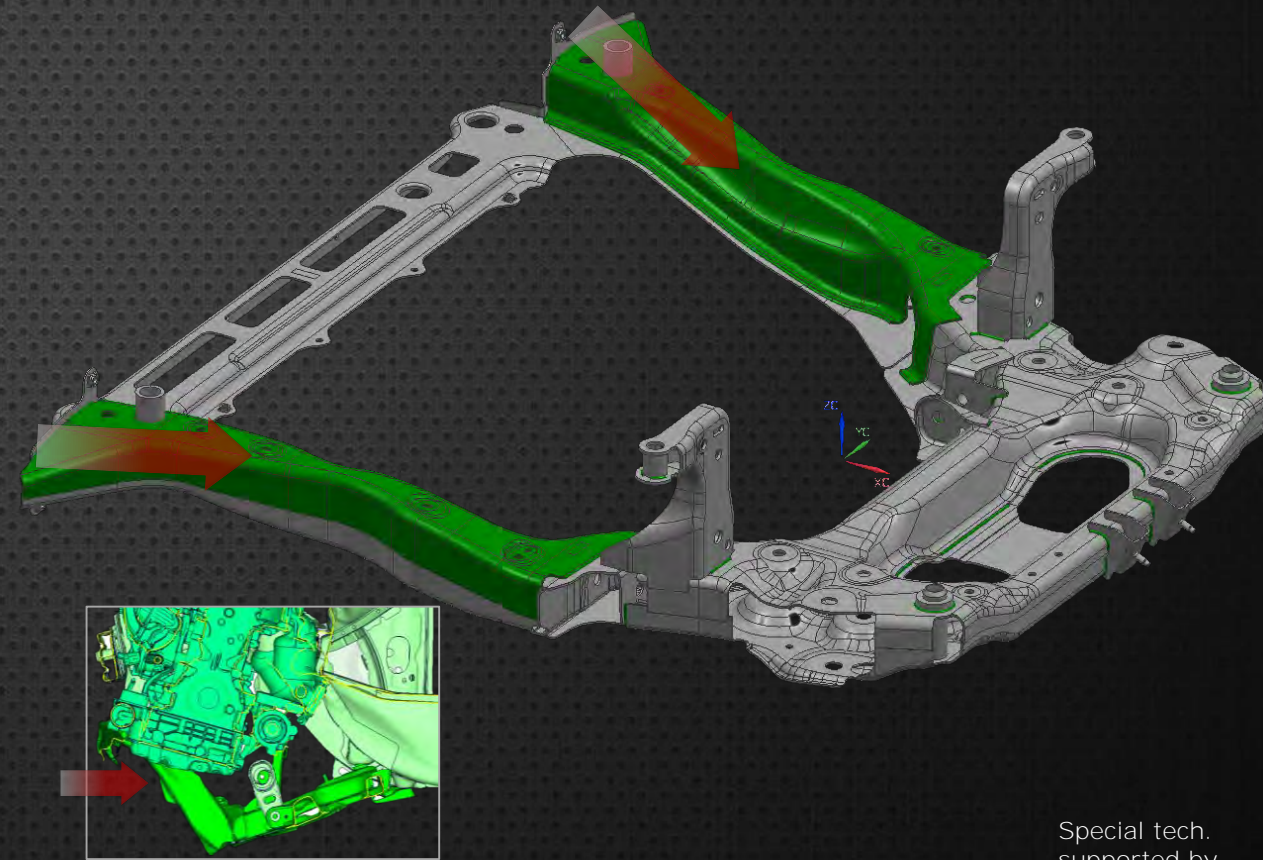
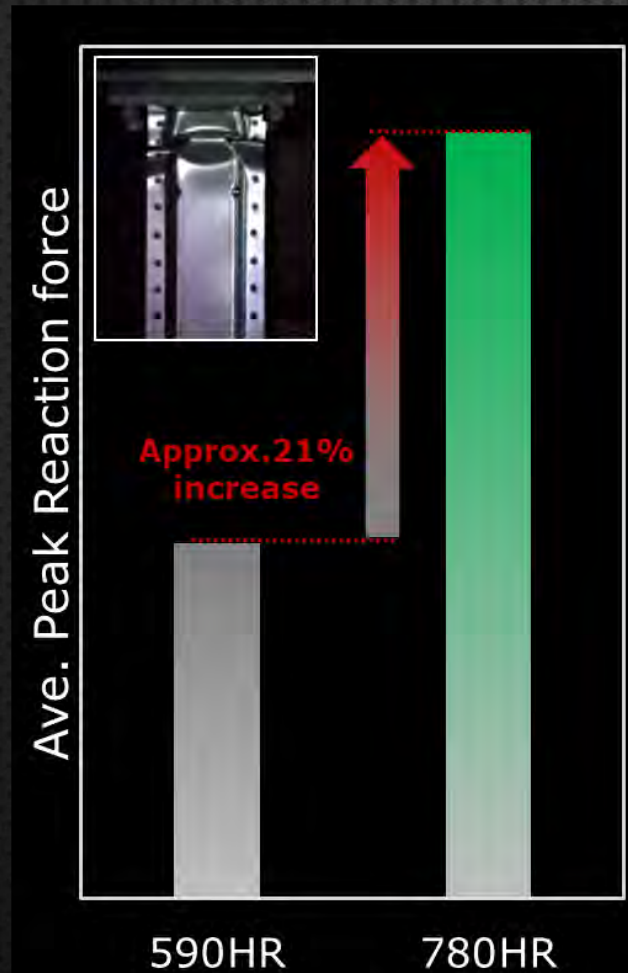
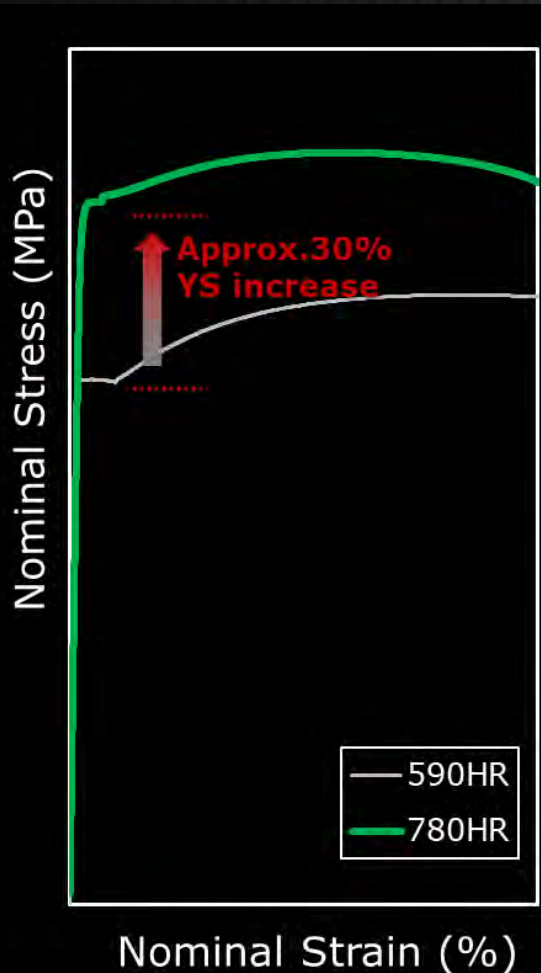
After Countermeasure



Front Suspension MBR Design – 780HR

□ Contributes to IIHS Small Over Lap performance while lightweighting

1. Achieved high reaction force with optimized shape design balanced light weight
2. -26% weight saving comparing 590HR adoption



Special tech.
supported by

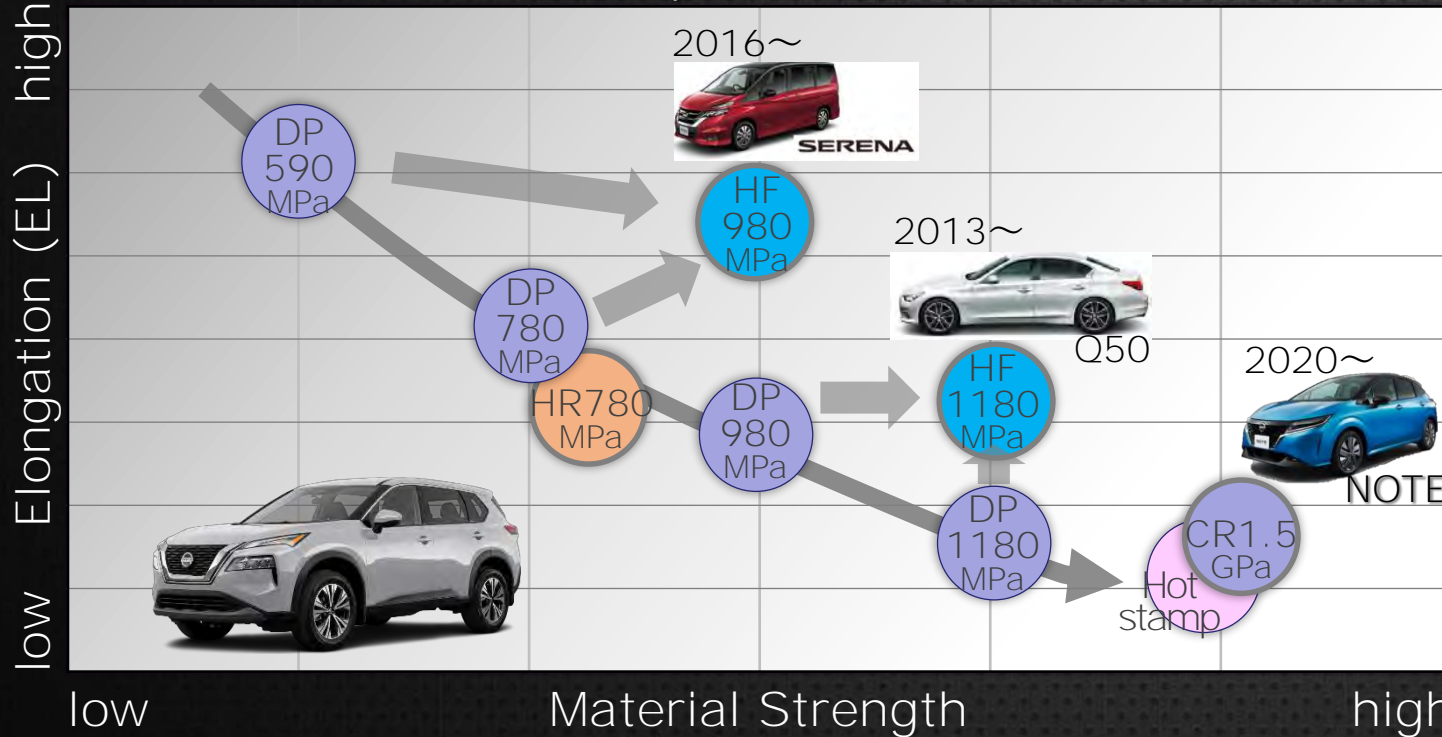
YORZU

Nissan AHSS* strategy

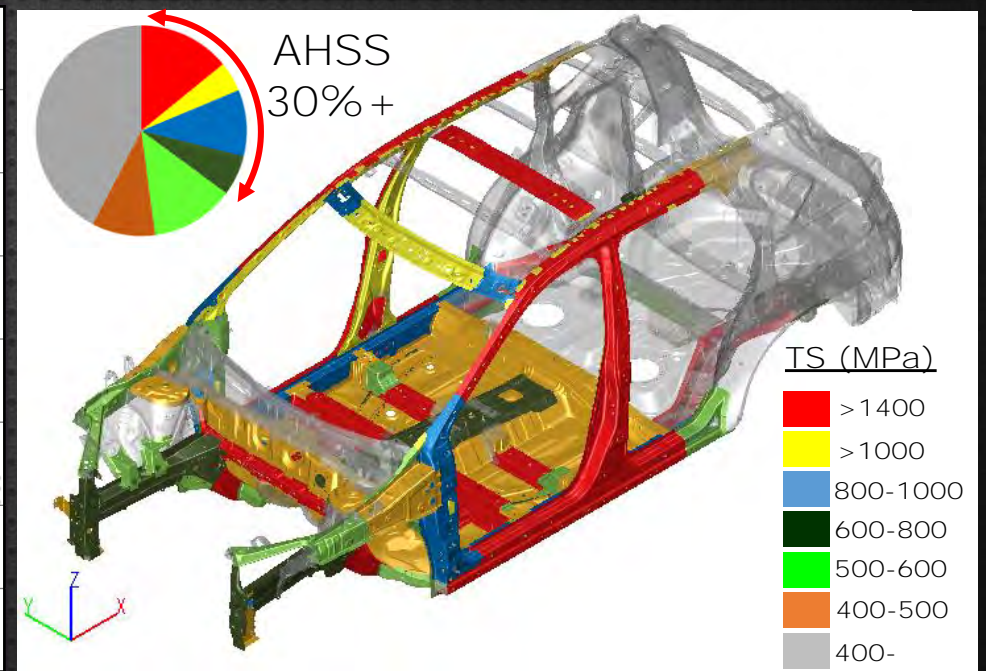
*AHSS: Advanced High Strength Steel \geq TS 780MPa

- +780MPa steels aims to develop & apply more than 30% for light weight and crash performance improvement

Steel portfolio



Idealized view of the future BIW



Please support Nissan AHSS strategy!!

All-New

Nissan Rogue

