FIA FORMULA 1 WORLD CHAMPIONSHIP

2024 UNITED STATES GRAND PRIX

18 - 20 October 2024

From	The FIA Formula One Media Delegate	**Document**	6
To	All Teams, All Officials	**Date**	18 October 2024
		Time	09:55

Title Car Presentation Submissions

Description Car Presentation Submissions

Enclosed 2024 United States Grand Prix - Car Presentation Submissions.pdf

Roman De Lauw

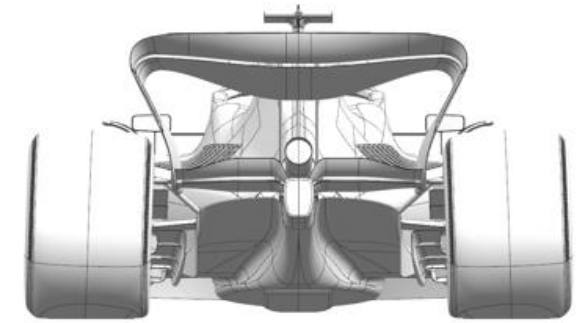
The FIA Formula One Media Delegate

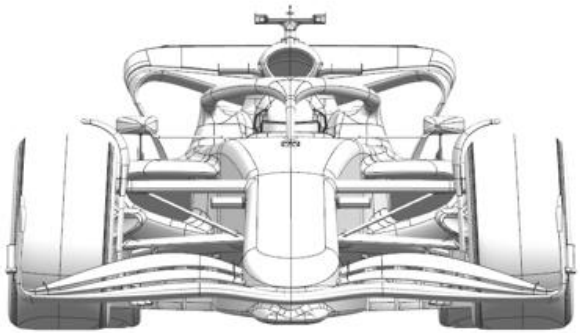
FIA FORMULA 1 WORLD CHAMPIONSHIP

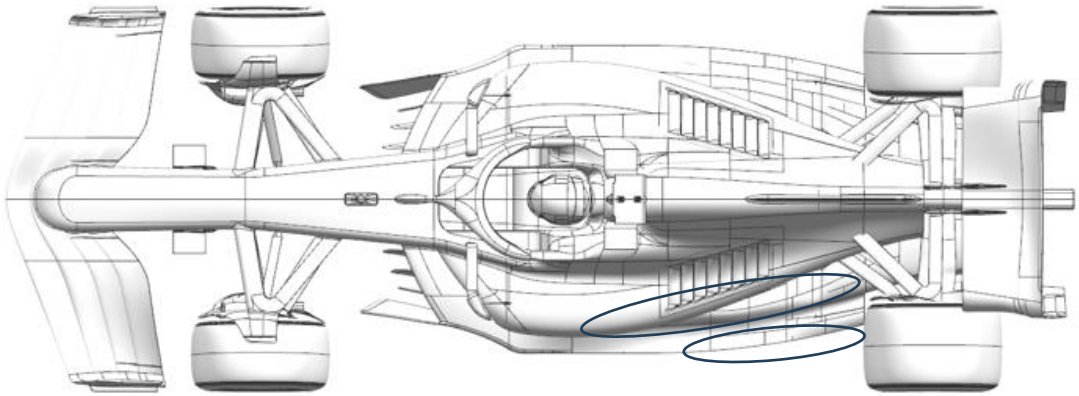
Car Presentation – USA Austin Grand Prix

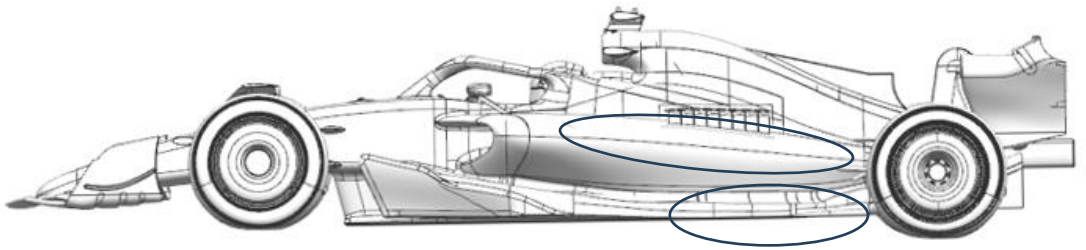
Red Bull Racing

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Floor Edge	Performance - Local Load	Revised edge wing camber over rearward third.	With more local camber in the edge wing over its rearmost third, more local load is generated whilst maintain flow stability
2	Coke/Engine Cover	Circuit specific - Cooling Range	Sidepod upper surface lower and floor junction curve re-profiled	Continuing the steps previously taken, more efficient cooling can be attained with the geometric changes to minimise the louvre openings.









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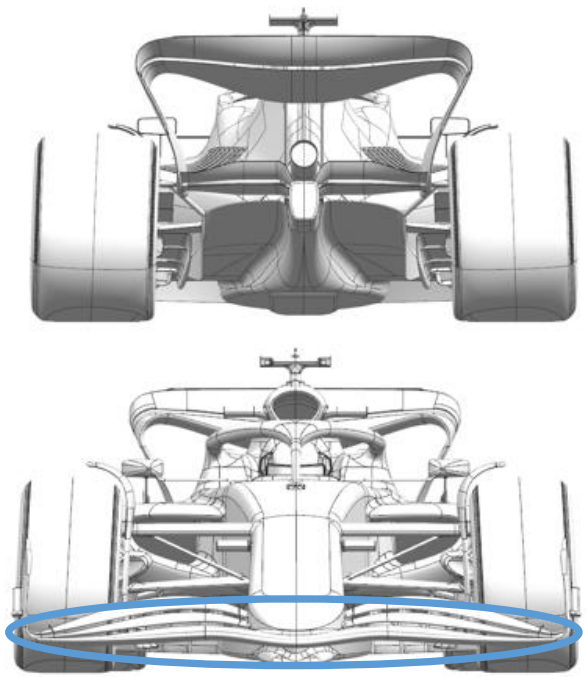
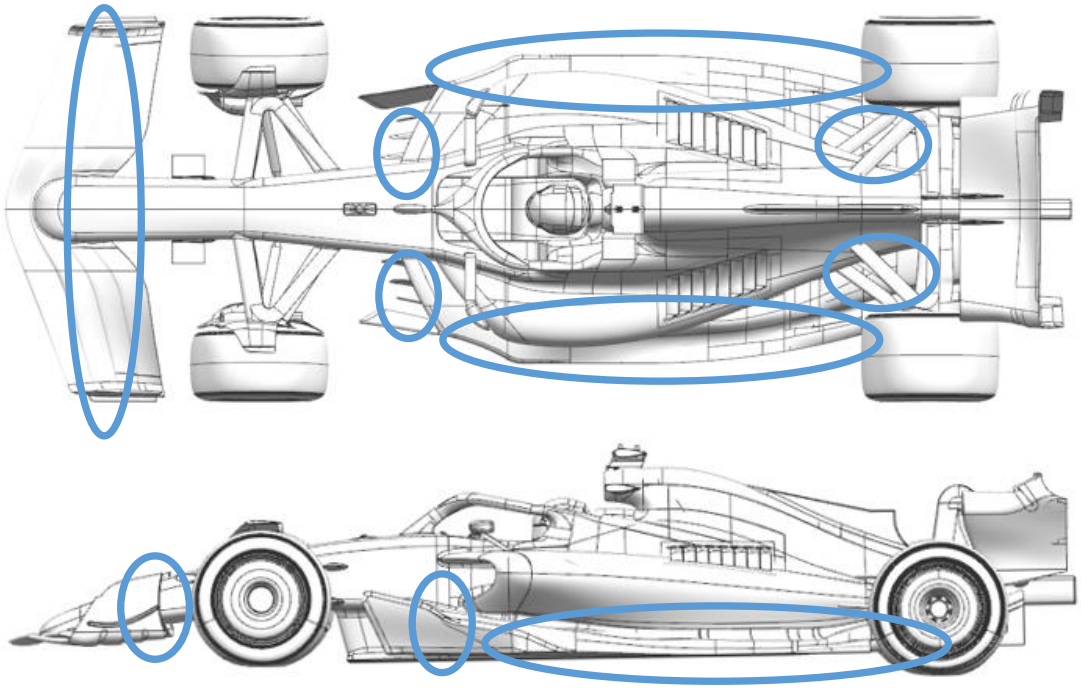
Car Presentation – 2024 United States Grand Prix

Mercedes-AMG PETRONAS F1 Team

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Front Wing	Performance - Flow Conditioning	Change in flap twist distribution	Change in flap spanwise twist, reduces front wing wake which improves flow to the rear of the car and rear downforce.
2	Front Suspension	Performance - Flow Conditioning	Re-profiled upper wishbone fairing.	Re-profiling has improved the attachment of the rear leg through an increased operating range, improving flow to the rear of the car.
3	Floor Edge	Performance - Local Load	Additional vane element added to floor edge wing.	Additional vane element increases mass flow under forward floor, increasing vorticity shed from the fence system, increasing floor load.
4	Sidepod Inlet	Circuit specific - Cooling Range	Lower lip of sidepod inlet moved rearwards.	Lower lip geometry change has improved the flow alignment through a increased range of operating conditions and cooling levels - ultimately improving engine cooling.
5	Coke/Engine Cover	Circuit specific - Cooling Range	Additional cooling exits local to rear suspension legs	Additional cooling exit added local to rear suspension to increase sidepod mass flow whilst minimising impact on downstream components such as the rear wing.
6	Floor Fences	Performance - Flow Conditioning	Reprofiled inboard fence	New fence profile has improved local pressure distribution and position of vorticity, improving both local and downstream load through better onset flow.





FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – United States Grand Prix

SCUDERIA FERRARI

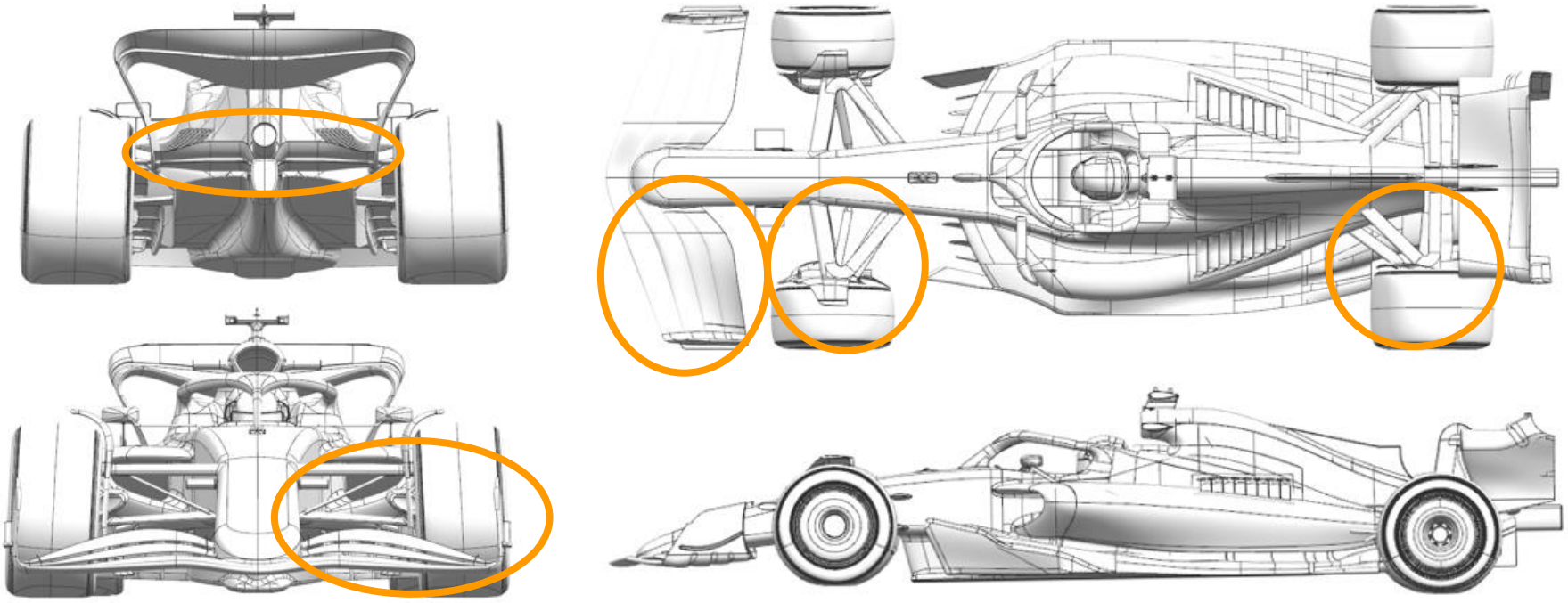
No updates submitted for this event.

FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – Austin Grand Prix

McLaren Formula 1 Team

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Front Wing	Performance - Flow Conditioning	New Front Wing Geometry	The new front wing geometry improves flow conditioning in conjunction with the updated front suspension geometry throughout various conditions resulting in improved aerodynamic load.
2	Front Suspension	Performance - Flow Conditioning	New Front Suspension	The new front suspension is designed around the new front wing geometry aimed at maximising the improved flow characteristics introduced with it.
3	Front Corner	Performance - Flow Conditioning	Updated Front Brake Duct Furniture	The front brake duct furniture has been updated to complement the changes on front wing and front suspension, resulting in overall improved flow characteristics.
4	Front Corner	Circuit specific - Cooling Range	Low Cooling Front Brake Duct	Suitable for tracks with low front brake cooling demand, a reduced cooling front brake duct has been designed, improving overall aerodynamic load at the expense of front brake cooling.
5	Rear Corner	Performance - Flow Conditioning	Modified Rear Suspension Fairing	Small modification of rear suspension fairings with the aim of improving overall flow quality across multiple conditions, enabling aerodynamic load generation.
6	Rear Corner	Circuit specific - Cooling Range	New RBD Cooling Exit	The reworked rear brake duct cooling exit has been designed with the aim of improving overall cooling performance of the rear corner assembly.
7	Beam Wing	Circuit specific - Drag Range	Single Element Beamwing for High Downforce Rear Wing	A less loaded, single element beam wing, which efficiently reduces drag in conjunction with the high downforce rear wing assembly, has been brought to this event.



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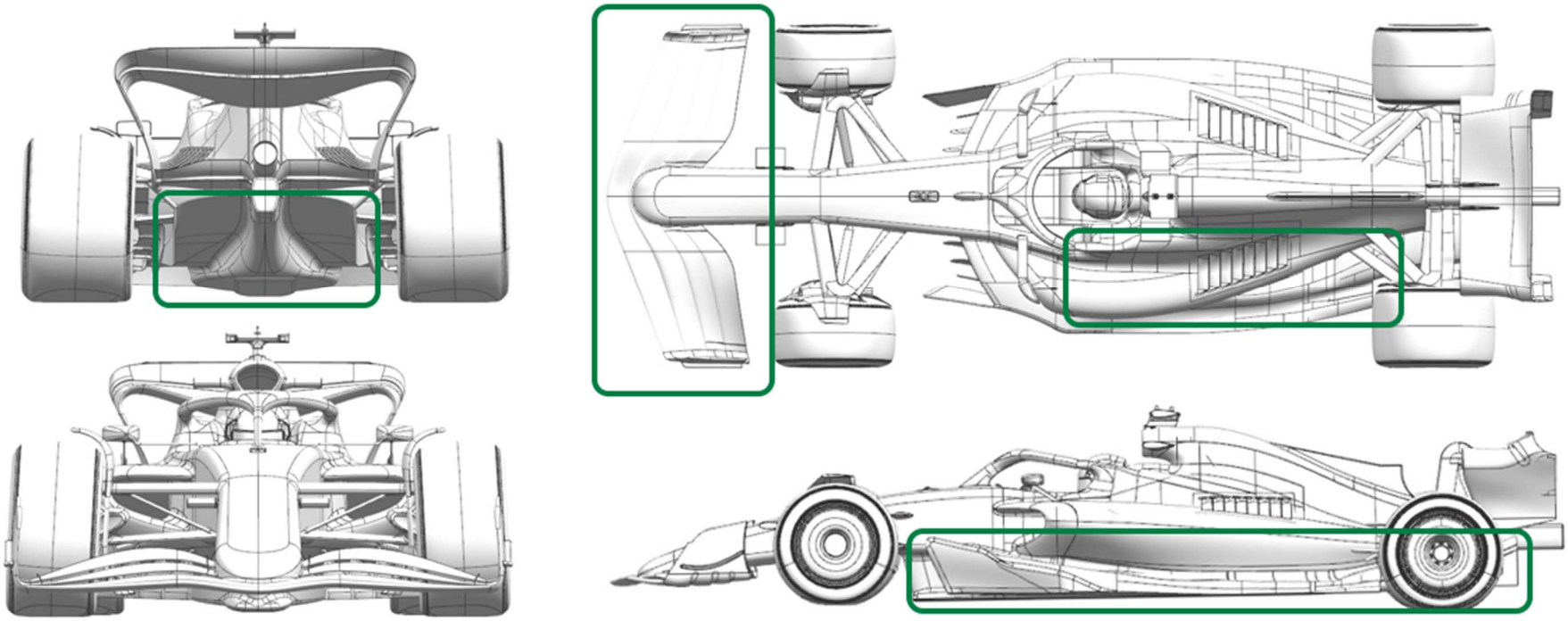
Car Presentation – United States Grand Prix

Aston Martin Aramco F1 Team

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Front Wing	Performance - Local Load	A new front wing with revised twist distribution alongside a new flap.	The changes to the front wing and endplate modify the spanwise loading of the wing assembly to improve the performance
2	Front Wing Endplate	Performance - Local Load	In combination with the front wing the endplate has revised tip details.	The changes to the front wing and endplate modify the spanwise loading of the wing assembly to improve the performance
3	Coke/Engine Cover	Performance - Local Load	Revised bodywork with a different coke line and simpler upper shoulder.	The bodywork and floor in combination improve the flowfield under the floor increasing the local load generated on the lower surface and hence performance.
4	Floor Body	Performance - Local Load	The main body of the floor has evolved in most places with the floor edge development.	The bodywork and floor in combination improve the flowfield under the floor increasing the local load generated on the lower surface and hence performance.
5	Floor Edge	Performance - Local Load	Small changes to the details of the floor edge wing and the main floor inboard of this.	The bodywork and floor in combination improve the flowfield under the floor increasing the local load generated on the lower surface and hence performance.
6	Diffuser	Performance - Local Load	The roof and sidewall of the diffuser have a slightly modified profile.	The bodywork and floor in combination improve the flowfield under the floor increasing the local load generated on the lower surface and hence performance.

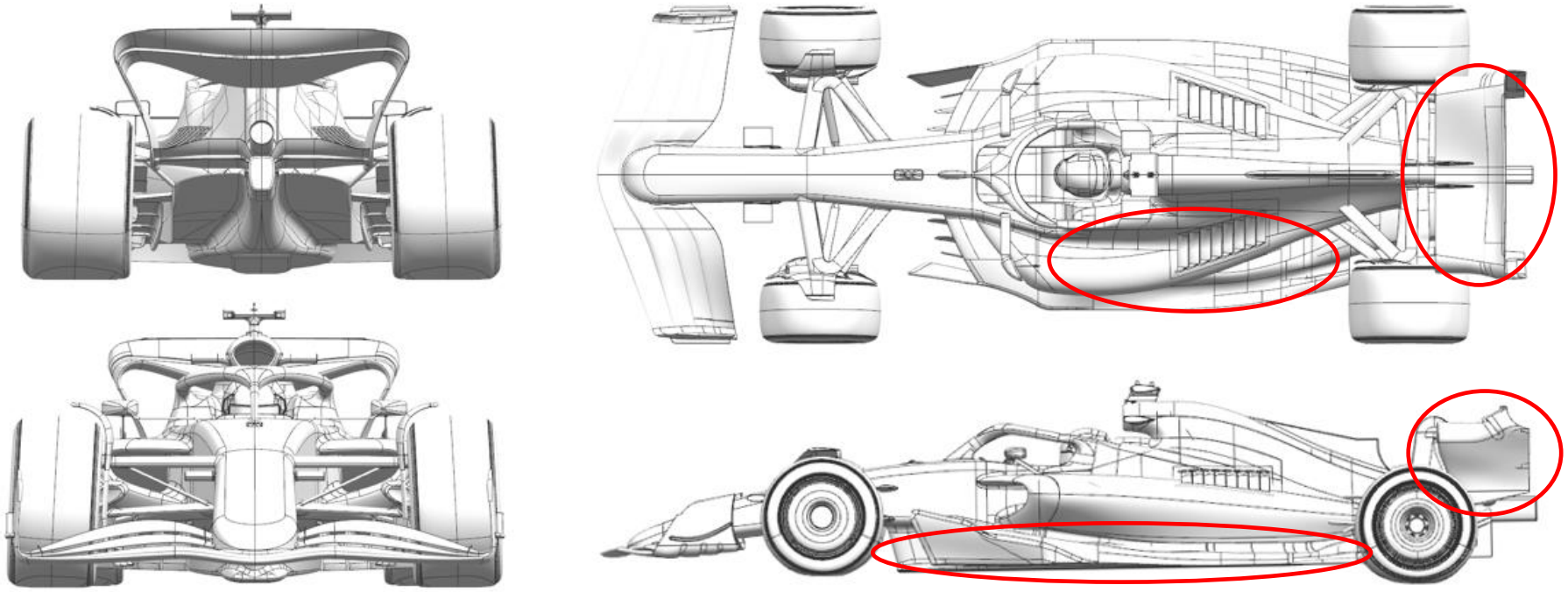


FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – United States Grand Prix

BWT Alpine F1 Team

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Floor Body	Performance – Local Load	Re-profiling of various parts of the main floor	General optimisation of the floor geometry to improve under floor flow quality with the objective of increasing the load generated by the floor.
2	Floor Edge	Performance – Local Load	Floor Edge Modification	Re-designed floor edge to improve under floor flow quality. This floor edge works in conjunction with the redesigned floor geometry.
3	Coke/Engine Cover	Performance - Flow Conditioning	New Bodywork Shape	The bodywork has been reshaped to improve flow conditioning and to better interact with the floor and the rear of the car.
4	Rear wing	Performance – Local Load	Re-profiled rear wing main plane and flap	This rear wing assembly is introduced to offer a gain in efficiency with more rear wing loading. This constitutes a suitable option for this track.



FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – USA Grand Prix

WILLIAMS

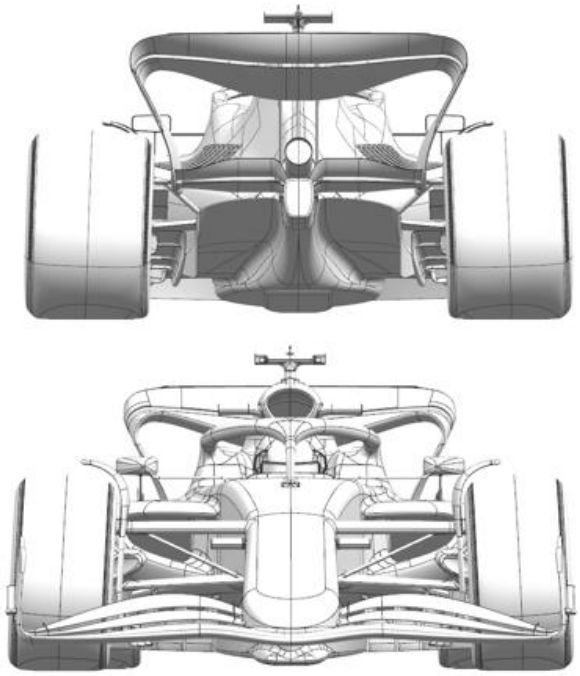
No updates submitted for this event.

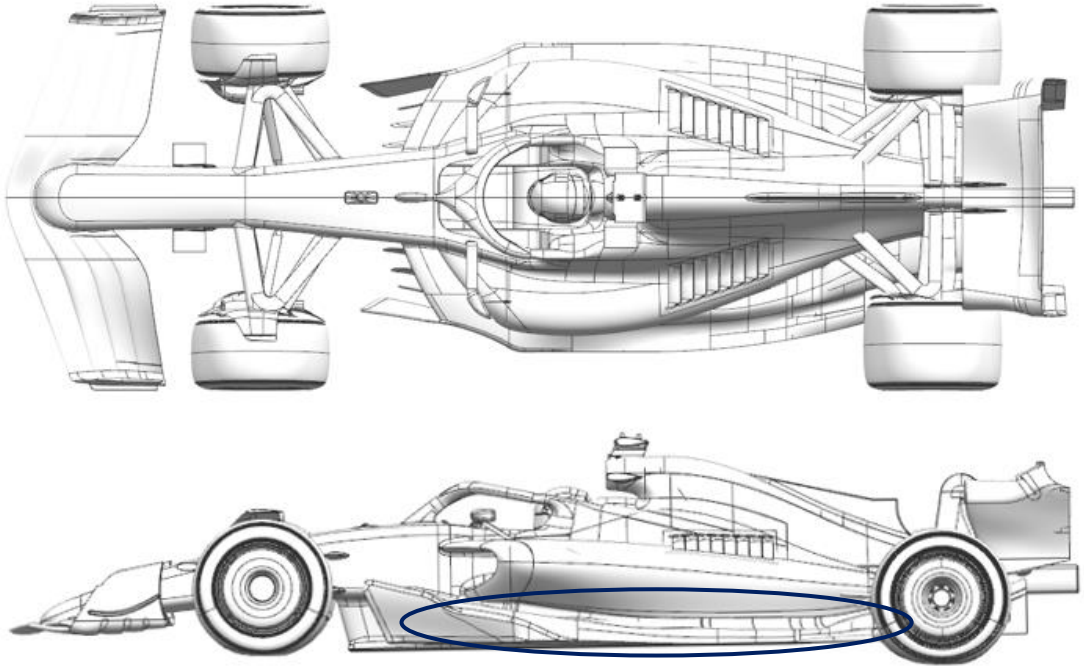
FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – United States Grand Prix

Visa Cash App RB

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Floor Body	Performance - Local Load	Profile changes to the main underfloor and chassis interface.	Increased local downforce generation, and loss reduction of underfloor structures.



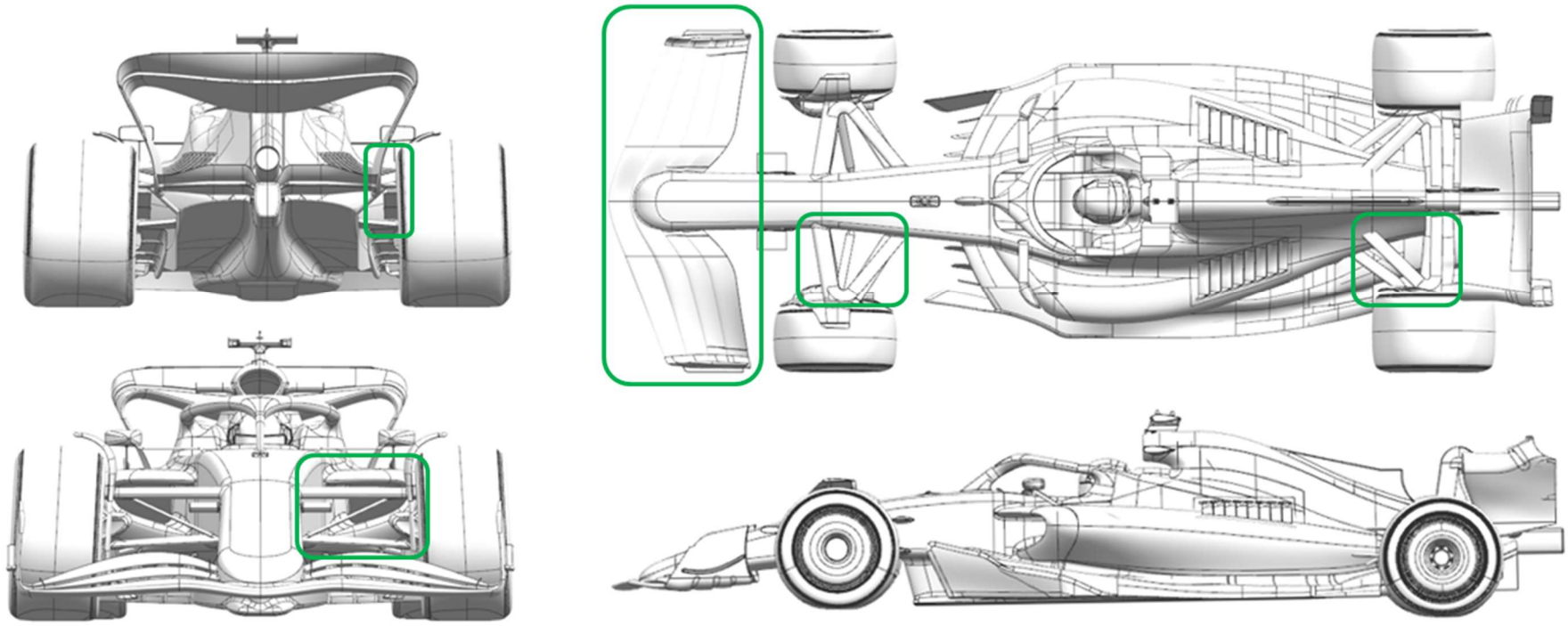


FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – United States Grand Prix

Stake F1 Team KICK Sauber

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Front Wing	Performance - Flow Conditioning	All FW elements have been updated.	The updated geometries aim to improve the front tyre flow structures. This has a positive effect to the flow field further downstream on the car, improving both overall downforce of the car and the aero characteristics.
2	Front Suspension	Performance - Flow Conditioning	Combined with the new FW we have updated the front suspension covers as well - pullrod, track rod and lower wishbone covers.	Together with the new FW the front suspension covers needed to be realigned based on the onset flow field to have clean flow features further downstream on the car.
3	Rear Suspension	Performance - Flow Conditioning	Revised rear top wishbone cover.	Rear top wishbone fairing upgrade with local flow conditioning improvements. Positive interaction with the updated rear brake duct brings a small efficiency increase.
4	Rear Corner	Performance - Flow Conditioning	Combined with the revised rear top wishbone cover the upper rear brake duct deflectors were updated.	The upper deflectors were updated in combination with the top wishbone cover. Improved local flow and positive interaction with the updated component brings a small efficiency increase.

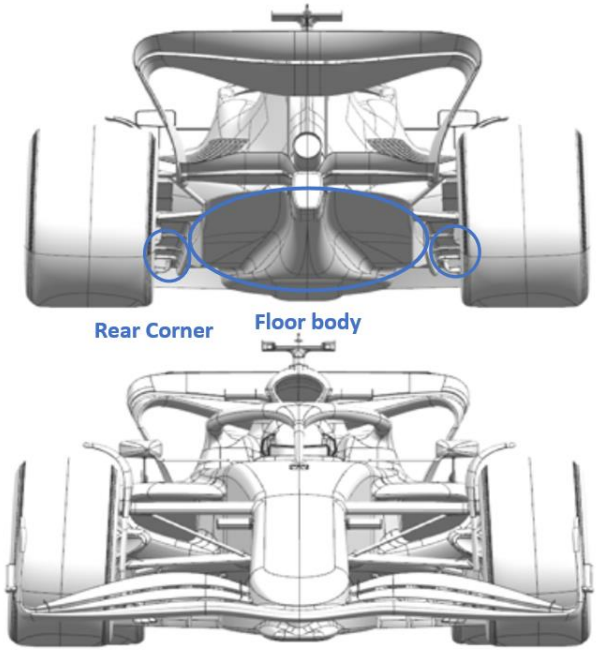


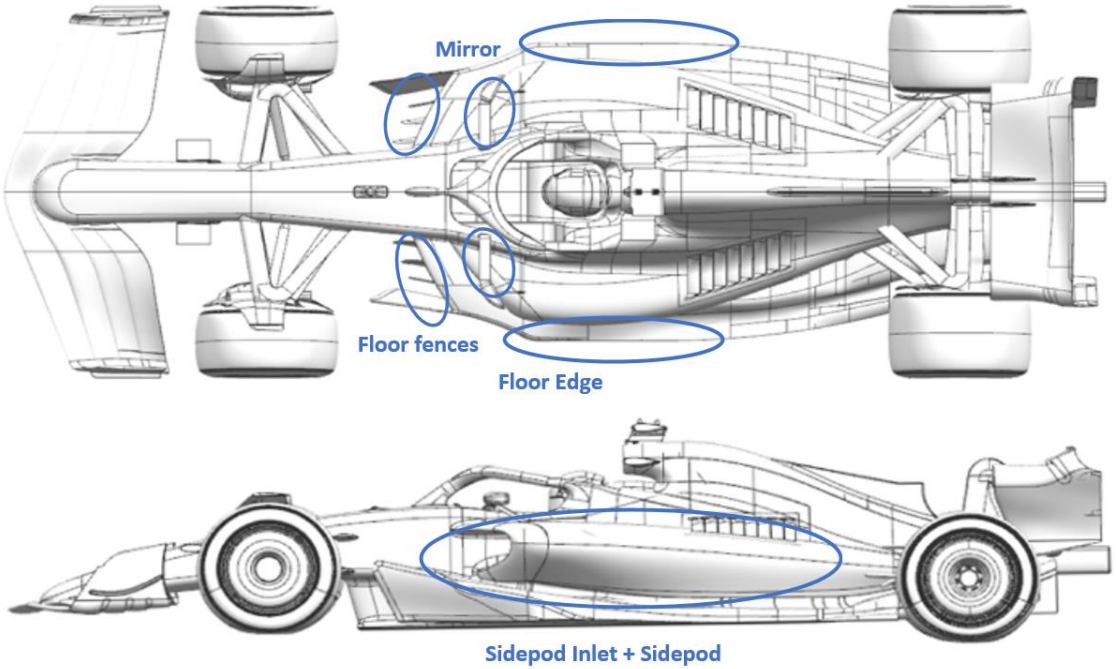
FIA FORMULA 1 WORLD CHAMPIONSHIP

Car Presentation – 2024 USA Grand Prix (Austin)

MONEYGRAM HAAS F1 TEAM

	Updated component	Primary reason for update	Geometric differences compared to previous version	Brief description on how the update works (min 20, max 100 words)
1	Sidepod Inlet	Performance - Flow Conditioning	Deeper Undercut	Increasing the undercut under the sidepod inlet favours clean air flow towards the rear of the car. Combined with the revised floor this allows a more balanced performance increase across the car.
2	Floor Body	Performance - Local Load	Revised initial floor expansion and diffuser geometry	Increased front floor suction combined with improved rear extraction allows to increase the overall performance of the floor.
3	Floor Fences	Performance - Flow Conditioning	Revised fence alignment	The improved front floor extraction required a revised alignment of the front floor fences, as they must manage different flow features.
4	Floor Edge	Performance - Local Load	New Edge Wing design	The revised floor allows greater extraction from the floor edge, hence an improved design allowed to extract higher performance from the car.
5	Rear Corner	Performance - Local Load	Additional element on the IB cascade	The improved incoming floor to the rear of the car allows higher extraction from the rear corner, which is achieved with an additional upwashing component on the inner face of the rear drum.
6	Coke/Engine Cover	Circuit specific - Cooling Range	Larger engine cover central exit	In case of additional cooling requirements, a bigger central exit on the engine cover is available.
7	Cooling Louvres	Circuit specific - Cooling Range	New cooling louver design on sidepod and engine cover	In combination with the new engine cover, additional cooling louver options are available, which increase heat extraction and try to minimize the drag penalty.


Rear Corner
Floor body


Mirror
Floor fences
Floor Edge
Sidepod Inlet + Sidepod