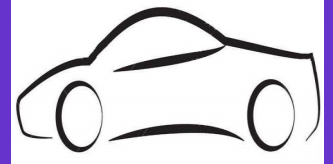




Auto Thrust

When we thrust, we leave everyone in dust.....



Sep 2018

Srinivas Institute of Technology, Mangaluru
Department of Automobile Engineering

Volume 3, Issue 1

Department Lab Facilities



H.O.D'S MESSAGE

The third volume of the e-news letter "Auto thrust" which is being released on time, just shows the continued commitment and the zeal of the Editorial Team. Another academic year has begun and the students are geared up with lot of plans to showcase their talents and to ensure more participation in co curricular and extra curricular activities. The department is committed to continue 'Swachh Abhiyan' and as a new initiative to engage the faculty and the enthusiastic students in outreach programs in the days to come. This year has already begun with industry visit by 5 th semester students. The SAE team is expanding with the addition of e-Baha team with multidisciplinary team members and already the e- Baha team has registered a stunning performance at the State and National level. This is really a good sign for the budding department and for the growing institution. The department has registered very good VTU results this time surpassing all the previous records. With the placement activities on the cards , it is very essential that all our final year students engage themselves , participate in all the placement drives and grab their first opportunity to work in industries.



The team 'Auto Thrust' has been instrumental in highlighting the departmental activities and setting it's own standards for others to follow. I thank the team and all the contributors for its success. Aim high for the upcoming issues.

Dr. Ramakrishna N. Hegde

Sep - 2018

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New Osram IREDs enhance vehicle vision without harming human eyes

As a compliment to cameras, LiDAR and radar, a new family of Infrared LEDs (IREDs) can expand the vision of SAE Level 4 and 5 autonomous vehicles without harming human eyes, claims maker Osram Opto Semiconductors.

for exterior applications, such as night vision enhancement, lane detection, and pedestrian protection. "To ensure eye safety while providing high illumination intensity, it is necessary to pulse the IRED. The Osram Black sensors have pulsing



Infrared night vision cameras, LiDAR, radar, and vehicle headlights will provide autonomous vehicles with an ability to see the surroundings at night, but the technologies have limitations.

"Visible camera sensors only work during the day when there is sunlight. Cameras don't work as well at night and depend on streetlights or other light sources. And radar does not have the resolution necessary to be a complete solution.

The goal is to achieve a two-point sensing verification where the camera sees an object as well as LiDAR, allowing the vehicle to act appropriately to the data. Osram Black 850 nm versions are intended

capability.

The 940 nm versions emit less red glow, making the sensors well-suited for in-vehicle applications, such as driver monitoring and gesture recognition.

A drawback with today's in-vehicle monitoring is blurry camera images. One way to counteract that blurriness is to increase the number of photons. "But if you do this at 940 nm, you have an eye safety issue," he said, "But by pulsing the [IRED's] photons, the light is safe for human eyes, and the amount of red glow is reduced.

Source: SAE INDIA

I-Pace: Jaguar reveals its twin-motor, battery-electric crossover

Ahead of the 2018 Geneva motor show, Jaguar unveiled the production version of its first-ever electric vehicle: the twin-motor I-Pace crossover. There's plenty of performance, too, for the first mainstream-automaker riposte to Tesla's Model X: the I-Pace has a 0-100 km/h (0-62 mph) acceleration time of 4.8s and all-wheel-drive capability from the arrangement that places a drive motor on each axle. The I-Pace also has a 0.29 drag coefficient, an aluminium architecture, intelligent GPS for better use of energy and advanced

mission and differential," the configuration was designed to provide precise longitudinal torque distribution.

The 90-kWh liquid-cooled lithium-ion battery pack uses pouched cells (432 in 36 modules). To control cell temperatures and maximize available power, the battery pack has a cooler for operating in moderate temperatures. The battery has a pre-conditioning system (when the vehicle is plugged in) to manage its temperature to maximize range from journey start—and Jaguar states



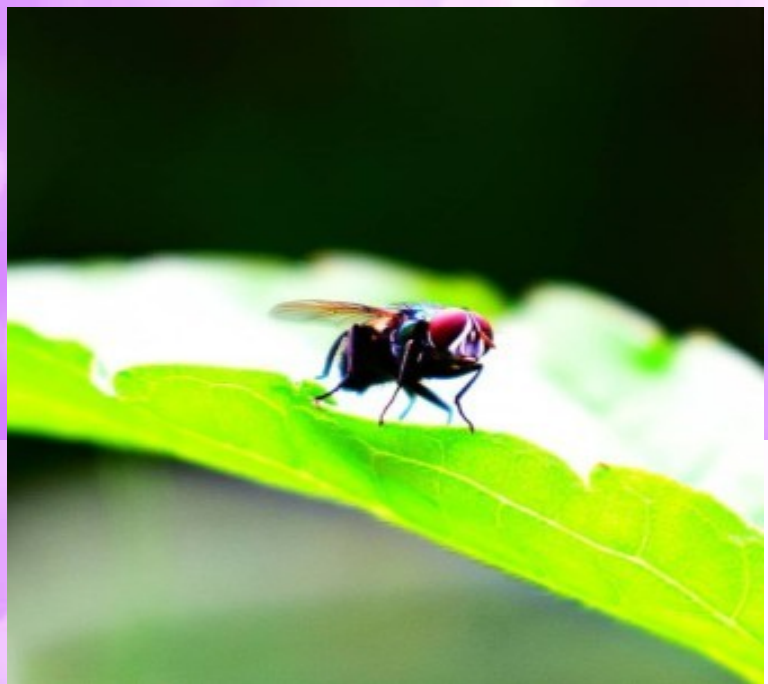
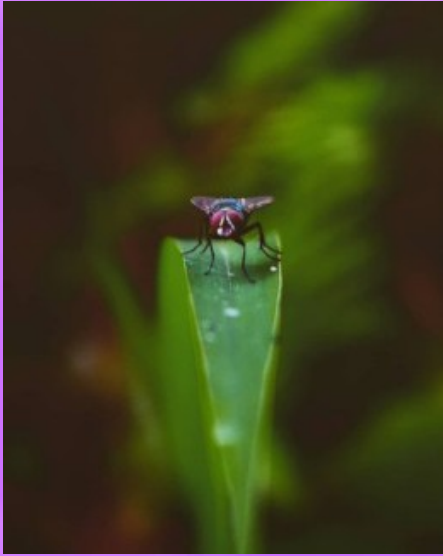
connectivity features. It includes rapid charging to 80% battery capacity in 85 minutes from a public charger and a 30-minute charge delivering around 130 km (80 miles) of driving range.

The midsize, 5-seat I-Pace—built in Austria in partnership with Magna Steyr joins the compact, conventional drive train Jaguar E-Pace and performance-oriented F-Pace to create a family of Jaguar crossover models. The I-Pace's electrical architecture is based on a 50-kW charger but is compatible with 100-kW charging. Drive comes from two Jaguar-designed synchronous permanent-magnet electric motors, one each at the front and rear axles. Power per motor is 147 kW (197 hp) and torque per motor is 348 N-m (257 lb ft). "Each (motor) fits concentrically around a compact, single-speed epicyclic trans-

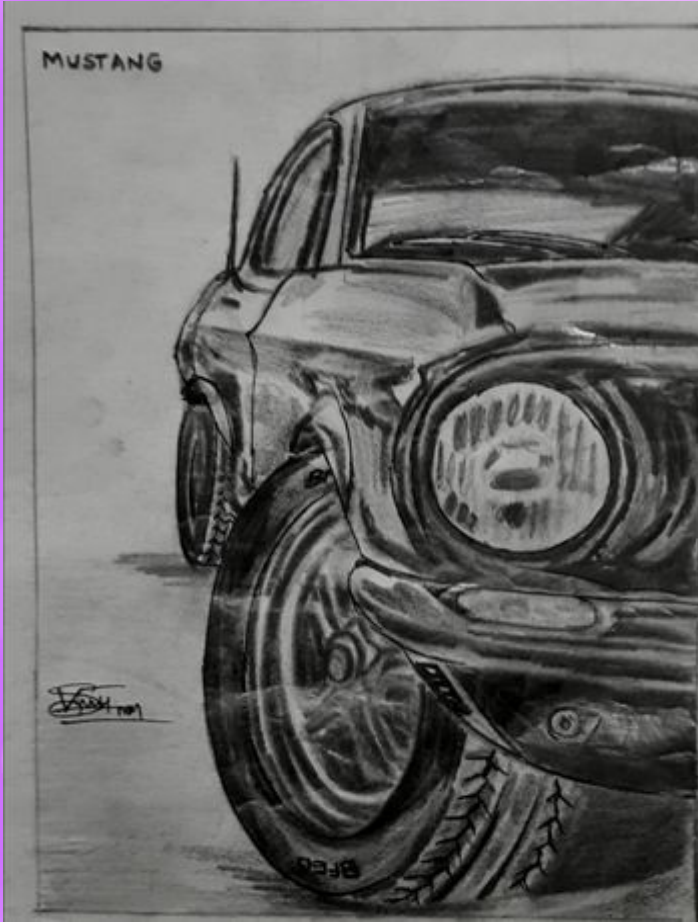
mission and differential," the configuration was designed to provide precise longitudinal torque distribution.

Self leveling air suspension with adaptive dynamics is an option. The I-Pace of course has energy-regeneration capability; instead of a conventional brake vacuum servo, an electric brake booster is used to give the braking system required flexibility when blending regenerative and regular mechanical braking, which allows precise and consistent feel in all situations, states Jaguar. Added to this is a driver-controlled selection of high or low levels of regeneration to augment driving range.

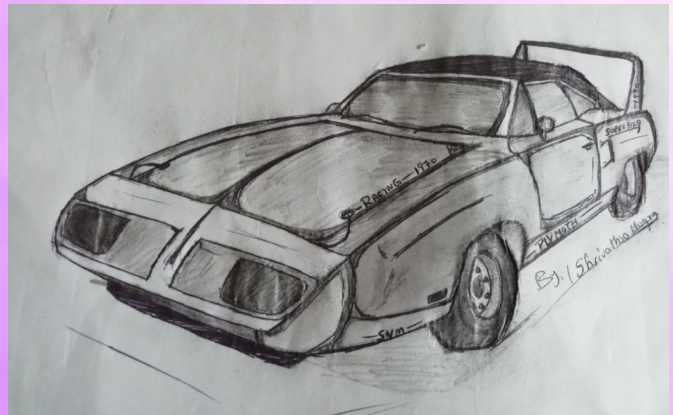
Photography by Manisha (5th sem)



Art by Vinush Mervin (5th sem)



Art by Shrivatsa M (5th sem)



Driverless vehicles – a new engine for the economy ?

The UK Government outlined in the Queen's Speech for 2016 that Britain seeks to lead the world in autonomous vehicle testing. The initial plan to introduce driverless testing to UK roads in 2017, with a view to paving the way towards nationwide introduction as soon as 2020, is already happening, with limited tests in Greenwich and Milton Keynes having already taken place.

The focus on 'driverless' cars is on what they lack – a driver. Often this misses what they enable – Barclays wanted to look into how the era of driver-free transport could transform the world around us, from increased productivity to supply-chain efficiencies, transforming communities and improvements to personal mobility. What we found is an exciting



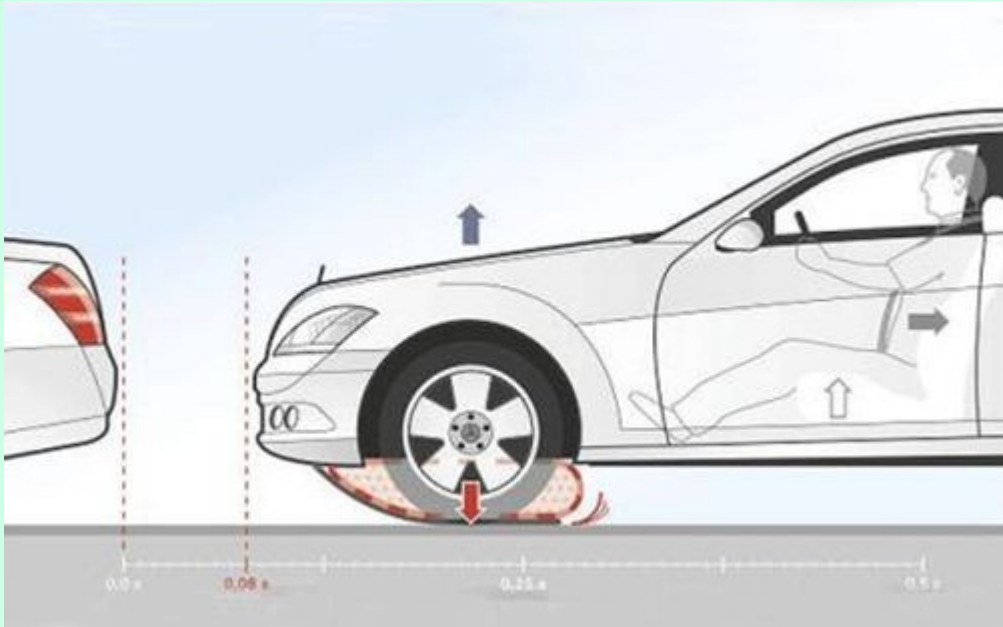
new future where cars could be bought based on how well they integrate with your work emails rather than how well they drive; where trucks are able to run in land-trains meaning significant logistical cost-savings and where suburban roads are freed from their perpetual car park status into green shared spaces for pedestrians and vehicles.

The sharing economy is likely to position car rental firms in a prominent position to benefit, with inner-city car share services like Zipcar and DriveNow particularly well-placed to be among the biggest beneficiaries. When a car can drive itself to where you are, the need to own your own car could be rapidly diminished, with the number of multi-car families to decrease significantly – we estimate that car ownership will decline from 1.2 cars per household in England today to 0.7 cars per household once autonomous vehicles are the established norm. While estimates suggest that in the era of driverless cars vehicle ownership could decline, those vehicles that are on the road are likely to run a significantly higher mileage than they do today. This is because they're likely to spend more time travelling between pick-ups with no one on board at all. This means that the demand for new vehicles to replace these is likely to remain much closer to today than one might at first imagine. 94% of accidents are caused by human error, meaning autonomous vehicles are likely to reduce the number of deaths and injuries in road accidents significantly.

Sarvesh S
7th sem Automobile Engg

Airbags That Help Stop Cars

Ever since airbags were added to vehicles, they've continued to make their way around the inside of our vehicles. We now have curtain airbags, side airbags, knee airbags, seat belts airbags and even ones that deploy under us. Maybe all of us don't have them in our cars, but they're on the road. And Mercedes is working on a new way to use airbags that moves them away from a passive safety measure and makes it part of an active safety system.



Mercedes is experimenting with airbags that deploy from underneath the car that will help stop a vehicle before a crash. The airbags are part of the overall active safety system and deploy when sensors determine that a crash is inevitable. The bags have a friction coating that helps slow the car down and can double the stopping power of the vehicle. The bags also lift the vehicle up to eight centimeters, which counters the car's dipping motion during hard braking, improves bumper-to-bumper contact and helps prevent passengers from sliding under seat belts during a collision.

What gives this kind of airbag potential as a future technology is that it uses existing vehicle safety systems. Although Mercedes has been working on this technology for several years, it isn't available on any production models yet and may not be seen on the road for another few years.

With the current evolution of airbags and their pervasiveness within the automotive world, it wouldn't be a stretch to imagine future cars using airbags to not only protect passengers, but to actually stop cars as well.

Mr. Prakash S.T
Asst. Professor
Department of Automobile Engineering

Teacher's Day Celebration under AMARA Association



Industrial Visit to Suprajit Automotive Pvt.Ltd by 5th sem students



Students participation in E - baja virtual round competition held at chitkara University Panjab



Inaugural function of AMARA 2018-19



Honda Activa 5G

Mileage:	60 Kmpl
Engine Displ.:	109.19 cc
Power:	8.11 PS @ 7500 rpm
Kerb Weight:	109 Kg
Starting:	Kick and Self Start
Wheels Type:	Alloy
Tyre Type:	Tubeless
Digital Fuel Indicator:	no
Standard Warranty (Years):	2
Engine Type:	Single Cylinder, SI Engine
Engine Displacement (CC):	109.19 cc
Torque (Nm@rpm):	9 Nm @ 5500 rpm

***Yamaha YZF R15 V3 STD***

Engine Displ.:	155 cc
Power:	19.3 PS @ 10000 rpm
Mileage:	48.75 kmpl
No Of Gears:	6-Speed
Fuel System:	Fuel Injection
ABS:	no
Head Lamp:	LED
Wheels Type:	Alloy
Tyre Type:	Tubeless
Torque (Nm@rpm):	15 Nm @ 8500 rpm

Change your life today. Don't gamble on the future, act now, without delay.

MARUTHI SUZUKI FACELIFT 2018

Engine type:	alpha diesel
Engine displacement:	1248
Fuel type	diesel
Maximum power:	88bhp@4000rpm
Maximum torque:	200nm@1750rpm
Seating capacity:	5
No of cylinders:	4
Gear box:	5 speed
Fuel supply:	CRDI
Fuel tank capacity:	43 litters
Front suspension:	MacPherson strut
Rear suspension:	torsion beam
Turning radius:	5.4 m
Steering type:	power

**Mahindra Marazzo**

Mileage	17.3 kmpl
Transmission	Manual
Engine Displ.	1497 cc
Fuel Type	Diesel
Engine Type	D15 Diesel Engine
Engine Displacement	1497 cc
Power	121bhp@3500rpm
Torque	300 Nm @ 1750 - 2500rpm
No Of Cylinders	4
Transmission	Manual
Gear Box	6 Speed
Drive Type	FWD

The past cannot be changed. The future is yet in your power.

Heated and ventilated seats

Heated seats have been around for quite some time now, but that doesn't make them any less awesome. Few sensations rival the warm embrace of heated leather around your backside in winter, except perhaps a cooled one in summer. Add in a massage function and you'll be happy as a clam.



Ambient interior lighting

Ambient interior lighting may not be very high-tech, normally found on high-end luxury cars like the Mercedes-Benz S-Class, LED lighting can generally be adjusted to different colors and levels of brightness, making drivers and passengers feel like they're in a high-end club rather than a car. You can even channel *Star Trek* by putting the cabin into "Red Alert" mode, but you'll have to make the sounds yourself ... if you're into that sort of thing.

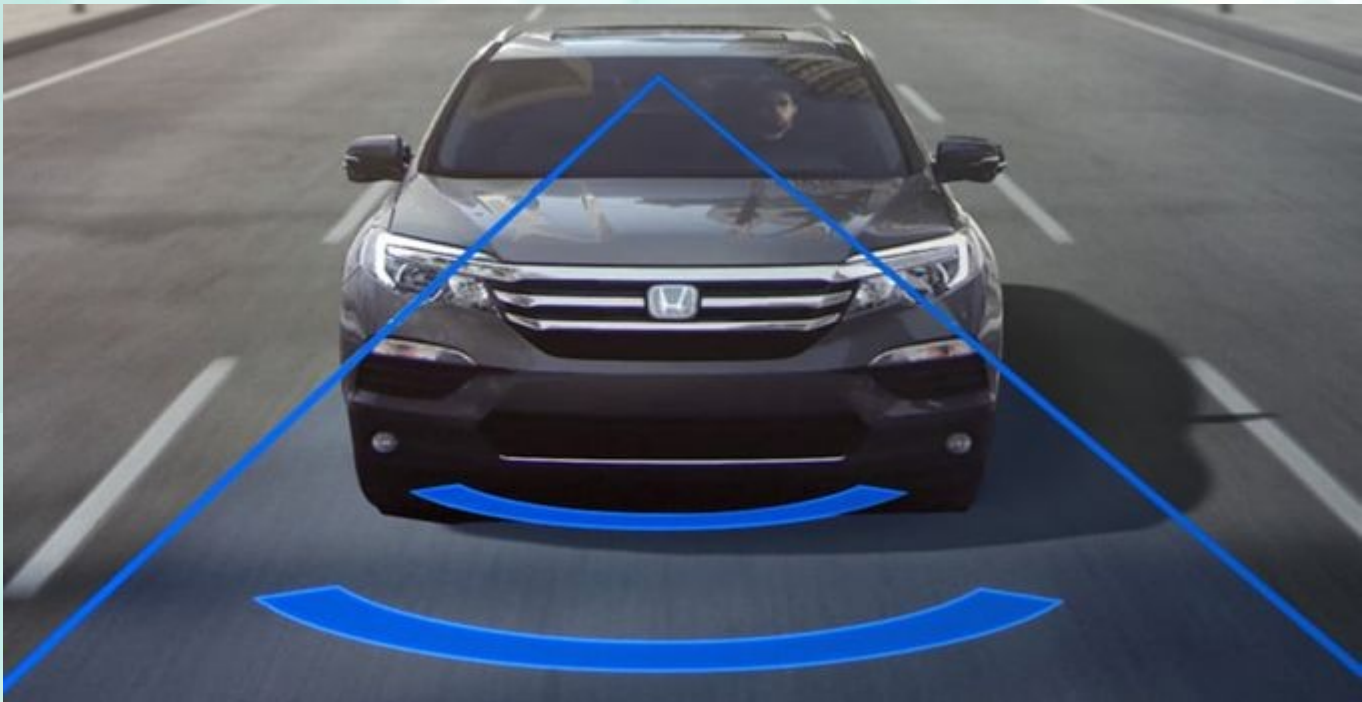
Traffic light prediction

Wouldn't it be nice to know *exactly* when the traffic light was going to change? If you spend a lot of time in the city, this information could make your commute a whole lot more bearable, and it could even save you money. The EnLighten App (Android, iOS) is a free program made by Connected Signals, and it uses data from GPS and local Traffic Management Centers to predict the duration and frequency of traffic lights. With this info on hand, you could safely finish that text or take a much-needed sip of coffee and save money on fuel.



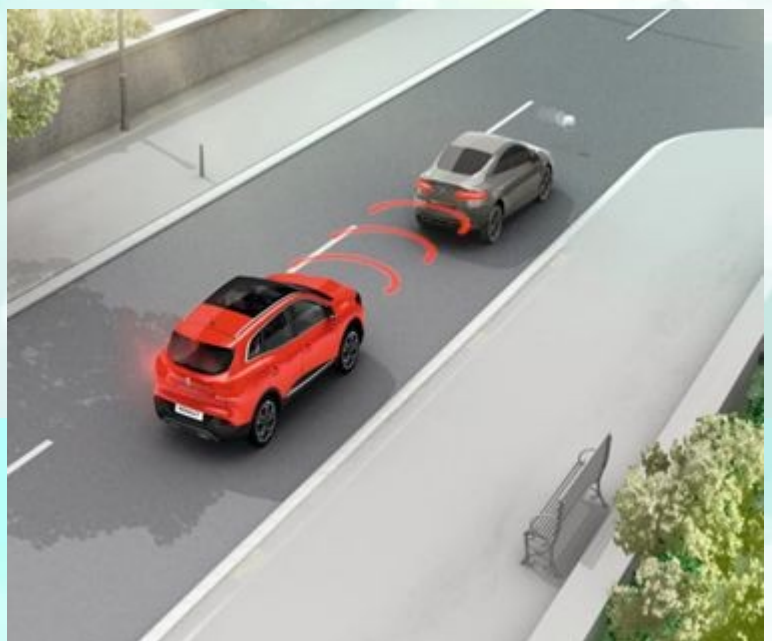
Lane keep assist

Of the many safety technologies now available on modern cars, lane keep assist addresses one of the simplest problems. Keeping a car centered in its lane isn't that difficult, but drivers still need a little sometimes, particularly on long trips. Lane keep assist systems can use the brakes or steering to keep a car from crossing the line, helping to make the roads a little bit safer.



Automatic emergency braking

Automatic emergency braking uses similar sensors to those found in adaptive cruise control systems, only here they're used to stop the vehicle autonomously when danger presents itself. It could be a pedestrian jutting into the lane or perhaps the car ahead suddenly slamming on the brakes, but either way, automatic braking can respond quicker and more efficiently than the human brain can. Automatic emergency braking uses similar sensors to those found in adaptive cruise control systems, only here they're used to stop the vehicle autonomously when danger presents itself. It could be a pedestrian jutting into the lane or perhaps the car ahead suddenly slamming on the brakes, but either way, automatic braking can respond quicker and more efficiently than the human brain can.





Students Result (8th sem Automobile) - 2018

100%

Congratulations

Congratulations to the following students of Automobile and Electronics Department who participated in E – baja virtual round competition at Punjab held in Chitkara University hosted by SAE INDIA, secured 45th rank all over India. The team also secured 3rd place in Karnataka and proud to be the 1st and only college from Mangalore. The Team is now getting ready for the main event which is going to be held in Indore, India Madhya Pradesh 2019.



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