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Safety and Security Technology Glossary

Structural system technology:

1. **Energy-absorbing steering column:** Manual-adjust steering column features two hydroformed coaxial tubes that move relative to each other to allow for enhanced energy absorption during an impact; power-adjust steering column employs a calibrated bending element that deforms during column stroke for optimal energy management

2. **Front and rear crumple zones:** Specially formed structural members that crumple and absorb energy in a collision, helping protect the occupant cabin

3. **Laminated glass:** Plastic sandwiched between glass panes to provide added strength; discourages break-ins

4. **Safety cage body structure:** Helps protect occupants by managing and controlling energy in the event of an impact

5. **Side-guard door beams:** Reinforcement beams inside the doors that help provide occupant protection in certain side collisions

6. **Splayed and Tapered Frame Rail Technology:** Highly efficient, energy-absorbing frame rail structure for certain frontal impacts; features frame-mounted, high-strength steel tire blockers to redirect tires outbound in certain front-offset impacts

Driver warning and assist, chassis-control and brake systems:

1. **Active Driving Assist:** Hands-on-wheel and eyes-on-road automated driving on certain roadways, using lane-centering with adaptive cruise control (also labeled Highway Assist System, depending on vehicle application)

2. **Advance Brake Assist:** Works with Full-speed Forward Collision Warning-Plus; increases deceleration if driver does not apply brake with sufficient force to respond to a potential collision condition

3. **Adaptive Cruise Control-Plus with Full Stop:** Helps maintain distance from vehicle ahead; under certain traffic conditions, system can bring vehicle to full stop without driver intervention

4. **All-speed traction control system:** While driving, helps keep wheels from spinning during acceleration from a stop or at speed by applying brakes alone or in combination with engine torque limitation

5. **Anti-lock brake system (ABS):** Senses and helps prevent wheel lockup, offering improved steering control under extreme braking and/or slippery conditions

6. **Automatic Emergency Braking (AEB):** Radar and camera technology combine to determine if frontal impact with another vehicle appears imminent; if so, system pre-fills brakes, then transmits audible and visual warnings for driver to intervene; no driver response triggers brief brake application as tactile alert; if driver remains unresponsive and frontal collision risk remains, brakes are applied to slow vehicle before impact; system may bring vehicle to full stop if imminent frontal collision detected at certain speeds (labeled Full-Speed Forward Collision-Plus, Full-Speed Forward Collison Warning with Active Braking or Forward Collision Mitigation, depending on vehicle application)

7. **Blind-spot Monitoring (BSM):** Uses radar sensors to aid driver when changing lanes, passing or being passed; blind-spot vehicle presence noted via illuminated icons in side-view mirrors and driver-selectable audible chime

8. **Brake Assist:** System applies maximum braking power in emergency braking situations, minimizing stopping distance

9. **Brake-lock differential system (BLDS):** Allows the vehicle to maintain forward motion if one or two wheels lose traction by selectively applying brakes to the spinning wheels

10. **Brake-throttle override:** Standard equipment on every Stellantis vehicle, it allows the driver to stop the vehicle more quickly when throttle and brake inputs occur simultaneously; electronic throttle control reduces engine-power output

11. **Brake/park Interlock:** Prevents transmission from being shifted out of “Park” unless the key is engaged with the starting system and the brake pedal is pressed

12. **Brake traction-control system (BTCS):** Helps to keep wheels from spinning during acceleration from a stop, or during slow speeds, by applying individual brakes to the slipping wheel(s)

13. **Drowsy Driver Detection:** System tracks vehicle movement, such as lane deviation, and driver-vehicle interaction, such as steering-wheel input over time, for behavior consistent with that of a drowsy driver; when certain thresholds are reached, the system responds with audio and/or visual cautions for driver to pull over

14. **Electronic brake-force distribution (EBD):** Optimizes stopping distances and control under all vehicle loading conditions by regulating braking pressure, front to rear

15. **Electronic roll mitigation (ERM):** Uses input from electronic stability control (ESC) sensors to anticipate potential rollover conditions; applies brakes individually and modulates the throttle position as needed to help reduce the potential of vehicle rollover

16. **Electronic stability control (ESC):** Enhances directional control and stability of vehicle in various driving conditions; activation occurs when steering-wheel angle is inconsistent with vehicle’s direction of travel; automatically reduces throttle input and/or selectively deploys brakes to counteract oversteer or understeer

17. **Forward Collision Warning:** Radar determines if a frontal impact with another vehicle appears imminent; if so, system pre-fills brakes, then transmits audible and visual warnings for driver to intervene

18. **Hands-free Active Driving Assist:** Offers hands-free driving and lane-centering at all speeds on approved roadways; system also will predictively slow down vehicle in tight curves, automatically resume control after driver overrides and verify he/she is paying attention to road

19. **Hill-start Assist:** Assists drivers when starting from a stop on a hill; maintains brake pressure for short period of time after driver’s foot is removed from the brake pedal; if throttle is not applied within short period of time thereafter, brake pressure will be released

20. **Intersection Collision Assist:** Helps detect vehicles approaching from driver’s left and right when nearing a crossroad; if collision appears imminent, system delivers audible and visual alerts; if driver does not respond, system automatically activates vehicle’s brakes

21. **Lane Departure Warning with Lane-Keep Assist:** Alerts and assists driver; leverages electric power steering (EPS) to deliver subtle steering-wheel input when system detects need for course correction.

22. **ParkSense Parallel/Perpendicular Park Assist:** Features ultrasonic sensors on the bumper to find and guide driver into parking space; guidance system automatically controls the steering angle while driver controls gear position, brake and accelerator; parallel parking possible on either side of the car; to accommodate perpendicular parking, vehicle is backed into the space

23. **ParkSense Rear Park Assist System with Stop and Release:** In reverse, at low speeds, ultrasonic sensors detect stationary objects; if imminent collision is detected, system will provide momentary, autonomous brake pulse; below 4.4 miles per hour (mph), system will bring vehicle to a stop before releasing

24. **ParkView rear backup camera:** Provides wide-angle view of area immediately behind vehicle; available features include dynamic grid lines to aid driver when maneuvering into parking spaces or narrow areas; also assists when lining up trailer to vehicle's hitch, when so equipped; image displayed on the center-stack screen or in rearview mirror when transmission is shifted into reverse

25. **Pedestrian Automatic Emergency Braking (PAEB):** If system detects a pedestrian and determines a frontal collision appears imminent, it will – if driver does respond accordingly – activate the vehicle's brakes; in certain conditions, the system is capable of bringing the vehicle to a stop

26. **Pedestrian/Cyclist Automatic Emergency Braking:** If system detects a pedestrian or cyclist and determines a frontal collision appears imminent, it will – if driver does respond accordingly – activate the vehicle's brakes; in certain conditions, the system is capable of bringing the vehicle to a stop

27. **Rain Brake Support:** In rainy conditions, occasionally pushes brake pads lightly against brake rotors to keep rotors dry

28. **Ready Alert Braking (RAB):** Anticipates situations when driver may initiate an emergency brake stop and uses ESC pump to set brake pads against rotors, decreasing time required for full brake application

29. **Rear Cross Path (RCP) detection:** Warns drivers of lateral traffic when backing up; automatically activates any time a vehicle is in reverse gear; driver alerted of approaching vehicle(s) via illuminated icons on side-view mirrors and driver-selected audible chime

30. **Trailer-sway Mitigation:** Uses input from ESC sensors to anticipate potential trailer-induced yaw conditions; applies brakes individually and modulates throttle to help driver maintain control

Occupant restraint technology:

1. **Active head restraints:** Deploy during collision; help limit occupant head movement

2. **Advanced multistage driver and front-passenger air bags:** Inflate with force appropriate to the severity of the impact; meet FMVSS 208 advanced air bag requirements for smaller, out-of-position occupants

3. **All-row, full-length side-curtain air bags:** Extend to all outboard front- and rear-seat passengers; housed in headliner above side windows, each side air bag has its own impact sensor that, when warranted, triggers deployment on the side of the vehicle where impact occurs

4. **BeltAlert:** Activates chime and/or illuminates icon in instrument cluster to remind driver and front passenger to buckle up if vehicle is driven with unbelted front-seat occupants

5. **Child Seat Anchor System:** LATCH (Lower Anchors and Tethers for CHildren) designed to ease installation of compatible aftermarket child seats

6. **Constant-force retractors:** Regulates force exerted on occupant by seat belt by gradually releasing

webbing in controlled manner

7. **Front seat-belt pretensioners:** During a collision, impact sensors initiate front seat belt pretensioners to remove slack in the seat belt system, thereby reducing the forward movement of the occupant's head and torso

8. **Front-seat-mounted side pelvic thorax bags:** Help provide enhanced protection to driver or front passenger in certain impacts

9. **Driver's-side knee air bag:** Deploys with advanced multistage driver air bag; located below instrument panel, device designed to properly position occupant during impact

10. **Height-adjustable seat belts (front row):** Outboard seat belts feature height adjustment, allowing for seat belt to be placed in optimal position

11. **Occupant Restraint Controller:** Detects impact and determines if air bag deployment, and degree of deployment, is appropriate; also manages front seat belt pretensioners

Lighting and visibility systems:

1. **Active turn signals:** Turn signal flashes three times when stalk is depressed for one second

2. **Adaptive Front-lighting System (AFS):** Points headlamps in the intended direction of vehicle travel using steering wheel and vehicle speed inputs to provide improved illumination entering turns

3. **Auto-adjust exterior mirrors:** Side-view mirrors automatically adjust to enhance the field of view for backing maneuvers

4. **Auto-dimming rearview mirror:** Auto-dimming mirror automatically reduces glare from bright light of trailing vehicles, allowing driver to have a clearer view of the road ahead

5. **Automatic defog:** Automatic temperature control system measures interior humidity and activates defogging system without driver intervention

6. **Automatic headlamps:** Headlamps turn on and off automatically depending on exterior light levels and if windshield wipers are operating

7. **Automatic high-beam headlamps:** Headlamp system adjusts to ambient light and oncoming traffic to deliver maximum lighting without driver intervention

8. **Daytime running lamps (DRL):** Low-intensity halogen or signature LED lights that illuminate during daytime conditions, increasing vehicle's visibility to other drivers

9. **Digital rearview mirror:** Replaces conventional rearview mirror with a LCD monitor to help improve driver rearward visibility; displays real-time video from rear-facing camera; can be turned off to revert back to reflective mirror

10. **Enhanced Accident Response System (EARS):** Makes it easier for emergency personnel to see and reach occupants in the event of an accident by turning on the interior lighting and unlocking doors after air bag deployment; also shuts off flow of fuel to the engine

11. **Head-up Display (HUD):** Provides driver with up to five different areas of interest, including Lane Departure, Lane Keep Assist, Adaptive Cruise Control, turn-by-turn navigation, current speed, current gear and speed limit; features full color

12. **Heated windshield washer nozzles:** Helps ensure nozzles stay free of ice and snow during freezing

conditions

13. **High-intensity discharge (HID) headlamps:** Provide approximately three times the light output than conventional reflector lamps

14. **Halogen infrared reflecting (HIR) bulbs:** Unique component coating delivers greater light output than conventional bulbs

15. **LED fog lamps:** Provide improved illumination during inclement weather

16. **LED headlamps:** Provide improved illumination

17. **LED taillamps:** Provide improved illumination (brake, stop, turn and running light functions)

18. **Night vision camera:** Augments headlamp reach; infrared sensors search for heat signatures of pedestrians and animals in the road ahead, at distances up to 219 yards (200 meters); if located, an alert with their positions relative to the vehicle are outlined in the instrument cluster directly in front of driver

19. **Rain-sensing windshield wipers:** A driver convenience feature that automatically senses moisture on the windshield and activates wipers

20. **Surround View Camera:** Uses four cameras positioned around the vehicle to provide bird's-eye perspective of vehicle and its immediate surroundings; driver can also select other views, including front or rear cross path

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Other features:

1. **SOS/Assist:** Button on rearview mirror or overhead console connects occupants with call-center agent who can send emergency assistance to the vehicle's location

2. **Auto-reverse sunroof:** Automatically reverses when it senses an obstruction while closing

3. **Auto-reverse windows:** Automatically reverses when it senses an obstruction while closing

4. **Capless fuel-filler door:** Enables fuel-filling simplicity

5. **Child-protection rear door locks:** Disables rear doors' inside-release handle by adjusting a small lever opposite the doorjamb

6. **Electronic locking fuel-filler door:** Prevents theft or tampering, which can lead to damage, inefficiency and unwanted fuel vapor release

7. **Express up/down windows:** One-touch express up/down window function

8. **Global Position Sensor (GPS):** Used for navigation guidance and electronic vehicle tracking

9. **Intelligent battery sensor (IBS):** Continually measures flow of current in and out of battery; if battery is running low, system shuts off less-critical electrical systems to conserve power; icon in cluster denotes activation

10. **Inside emergency trunk-lid release:** Glow-in-the-dark handle enables unlocking from inside trunk

11. **Keyless Enter 'n Go:** Electronic sensors detect if unique vehicle key fob is present, which enables passive cabin entry and trunk access; illuminates interior lamps and enables push-button ignition – no need to insert key

12. **Rear-seat Reminder Alert:** When enabled, will consider presence of an occupant in rear seat when a rear entry/exit door is opened at beginning of each key cycle; when potential presence of an occupant is determined and/or otherwise inferred, message will be displayed in the cluster reminding the driver to check the rear seats immediately after key-off, accompanied by an audible alert upon exiting vehicle

13. **Remote keyless entry:** Locks and unlocks doors and turns on interior lamps. If vehicle is equipped with security alarm, remote also arms and disarms system

14. **Remote start:** Fob-activated convenience; starts engine and activates interior climate settings while maintaining vehicle security

15. **Sentry Key Engine Immobilizer:** Uses engine key with embedded transponder and preprogrammed security code to discourage vehicle theft; when key is inserted into the ignition, controller sends a random number to the transponder and engine is allowed to start; engine will shut off after a few seconds if an incorrect key is used

16. **Speed-sensitive door locks:** System automatically locks doors when vehicle reaches prescribed speed

17. **Tilt-and-telescoping steering column:** Allows steering column to tilt and move toward or away from the driver to achieve a safe and comfortable distance from the advanced multistage front driver air bag, if deployed

18. **Tire-fill alert:** When filling tires with air, the system provides an audible chirp when a recommended pressure is achieved

19. **Tire-pressure Monitoring System (TPMS):** Lock-on Sync: Informs driver when tire pressure is too low; pressure-sensor modules within valve stems on all four wheels send continuous radio-frequency signals to a receiver; available systems use graphic display to indicate tire-specific pressure

20. **Traffic Sign Recognition:** Uses a forward-facing camera to identify speed limit and related traffic signs, such as those denoting school and construction zones

21. **Uconnect Voice Command:** Voice-recognition technology enables hands-free navigation system

22. **Uconnect Voice Command with Bluetooth:** Voice-recognition technology enables drivers to use Bluetooth-enabled phones while keeping their hands on the wheel and eyes on the road

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