

Slot.it European Endurance Championship 2013 Technical Rules 2013.2

Preamble

This document is the exhaustive coverage of the requirements for conformity of all cars racing the Slot it European Endurance Championship.

Changes that are not defined in this document are forbidden. Some interdictions are listed for clarity.

1- Car

1.1 Car models qualified for the Slot it European Endurance Championship 2013 are: Porsche 956C, Porsche 956KH, Porsche 962C, Porsche 962KH, Mercedes Sauber C9, Jaguar XJR6/9, Jaguar XJR12, Lancia LC2 84, Toyota 88C, Mazda 787B, Lancia LC2 85, Porsche 962 IMSA.

Model Car Table

 Porsche 956C	 Porsche 956KH	 Porsche 962C	 Porsche 962KH
 Mercedes Sauber C9	 Jaguar XJR6/9	 Jaguar XJR12	 Lancia LC2 84
 Toyota 88C	 Mazda 787B	 Lancia LC2 85	 Porsche 962 IMSA

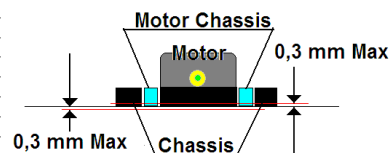
1.2 Any replacement, modification or omission must comply with the relevant rules of this document.

1.3 Maximum external tyre-to-tyre width at the front axle and the rear axle must not exceed the body width respectively at the front and rear wheel arch locations.

1.4 The minimum clearance of the chassis from ground, measured at the front axle zone is 0,1 mm. The minimum clearance of motor, chassis and motor chassis measured at the rear axle is 2,2 mm. Dimensions are with unused race tires on wheels and suspensions uncompressed if present or motor chassis fully tightened.

1.5 The lower side of the chassis, motor chassis and motor must lay in the same plane.

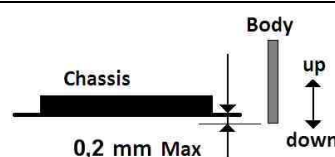
1.5.1 The max position tolerance between the lower plane of the motor and the lower plane of the motor chassis and/or the chassis is plus/minus 0,3 mm.



1.6 Screws may not be fully tightened.

1.6.1 Screws fastening the motor chassis to the chassis may be omitted at the side point of the EVO 6 chassis.

1.7 The body must not be lower than 0,2 mm in respect of the chassis lower plane



2 – Body

2.1 The Body must be unmodified and complete of all original parts as in the Box Stock version except as specified in this document.

2.1.1 The Body must be fastened to the chassis with all the screws like in the box car.

2.2 The complete body minimum weight, including all allowed modifications, omissions, replacements and excluding the mounting screws is tabulated in the Body Minimum Weight Table. The table also lists the overall body weight including the Lighting kit installed on the body.

2.2.1 For the SP 16 the weight is also listed for

- Case A: SP16 kit LEDs and wiring on the body. The chip including the capacitor is on the chassis or motor chassis;
- Case B: SP16 kit LEDs, wiring and chip on the body. The capacitor is on the chassis or motor chassis;
- Case C: SP16 kit LEDs, wiring and capacitor installed on the body. The chip is on the chassis or motor chassis.

2.3 The complete body maximum weight, including all allowed modifications, omissions and excluding the mounting screws must not exceed the min weigh + 3,0 g.

Body Minimum Weight Table

Minimum Body Weight		SP 16				SP 06
Model	Body Weight (g)	Body+SP16 full kit + 3.0 g	Body & LED +1.5 g (Case A)	Body, LED & chip +2.0 (Case B)	Body, LED & capacitor + 2.5 g (Case C)	Weight + SP 06 +1.7 g
Porsche 956 LH	20.0	23.0	21.5	22.0	22.5	21.7
Porsche 956 KH	20.5	23.3	22.0	22.5	23.0	22.2
Porsche 962 C	17.0	20.0	18.5	19.0	19.5	18.7
Porsche 962 KH	18.5	21.5	20.0	20.5	21.0	20.2
Porsche 962 IMSA	16.0	19.0	17.5	18.0	18.5	17.7
Jaguar XJR6/9	19.5	22.5	21.0	21.5	22.0	21.2
Jaguar XJR12	20.0	23.0	21.5	22.0	22.5	21.7
Mercedes Sauber C9	18.0	21.0	19.5	20.0	20.5	19.7
Lancia LC 2 84	20.0	23.0	21.5	22.0	22.5	21.7
Mazda 787 B	19.0	22.0	20.5	21.0	21.5	20.7
Toyota 88 C	18.0	21.0	19.5	20.0	20.5	19.7
Lancia LC 2 85	17.0	20.0	18.5	19.0	19.5	18.7

3 - Body Modifications

3.1 The minimum weight must be respected in any case.

3.2 The body external surface only must be completely painted in case of a white body or re-painted if the Box Stock car was painted.

- 3.2.1 No clear coat on any unpainted area is allowed.
- 3.2.2 The interior side must remain fully unpainted.

3.3 The driver must be painted.

3.4 The rear wing may be either unpainted, painted or decorated.

- 3.4.1 All Glasses must remain transparent and unpainted.

3.5 Each front light cover may be protected with max three stripes of tape. The strip size must not exceed 20 mm. long and 2 mm. wide approximately.



Alternate positions are allowed

3.6 The body must bear the team's name clearly visible.

- 3.6.1 The two identification plates bearing the Team assigned number must be placed only on each side of the body.

3.7 The body of the car can be drilled to install the LEDs of the lighting kit at the same location of the original lights. See also the specific car's appendix for exceptions if applicable.

3.8 Small detail parts like mirrors, wipers, blinkers, side lights, additional rear lights, hauling hooks and battery switches can be omitted as long as the specific model minimum weight is maintained.

- 3.8.1 Refer also to the relevant Appendix for specific allowances

3.9 All the Slot.it aftermarket parts ("tear proof" kits) for each model can be used.

Model	Tear proof	Model	Tear proof
Porsche 956 C	CS02P	Porsche 956 KH	CS02P
Porsche 962 C	CS02P	Jaguar XJR12	CS07P
Sauber C9 Mercedes	CS05P	Mazda 787	CS15P
Jaguar XJR6/9	CS07P	Porsche 962 KH	CS02P
Lancia LC2 84	CS08P	Toyota 88C	CS19P
Lancia LC2 85	CS21P	Porsche 962 IMSA	CS02P - CS02P/2

3.10 Mounting posts can be reinforced using a glued plastic or metal tube, or a wire.

3.11 Rear wing attachments can be reinforced with glue, tape or resin provided the body outside surface is not altered. No reinforcements must affect the upper part of the wing.

3.12 If the Light kit main unit is housed inside the cockpit, this part may be modified just to allow a way through to the wires connecting to power and to LEDs.

3.13 Specific Body and Chassis modifications are identified in the relevant Appendices.

3.13.1 Porsche 956 and 962 LH, KH, IMSA see appendix "Porsche 956&962"

3.13.2 Jaguar XJR6/9 & XJR12 see appendix "Jaguar XJR"

3.13.3 Mercedes Sauber C9 see appendix "Mercedes Sauber C9"

3.13.4 Lancia LC2 84/85 see appendix "Lancia LC 2"

3.13.5 Mazda 787 B see appendix "Mazda 787 B"

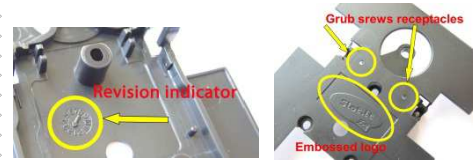
3.13.6 Toyota 88 C see appendix "Toyota 88 C"

3.14 Spare transparent Slot it coded parts can be used on appropriate bodies

4 – Chassis

4.1 Only the Slot.it Chassis coded CSxxT-xx are legal. These chassis are characterized by

- ♣ the presence of a circular revision indicator on the upper side
- ♣ the embossed Slot.it logo inside a recessed square and the suspension provisions on each side.
- ♣ Receptacles for the grub screws tuning the riding height of the forward axle.



4.2 Chassis means the entire set of original component parts to be assembled and/or glued.

4.3 The chassis, including the spares, must be marked with the name of the racing team

4.4 M2 screws PA05 or free type can be used in the existing dedicated locations to set the front axle riding height, whether or not the SP07 supports are installed.



4.5 The max width of the elongated holes of the chassis for its assembly of the body must not exceed 2.6 mm. The measured dimension includes the washer under the mounting screw head, if present.

4.6 The Box Stock chassis is assumed to be flat.

4.6.1 Deviations are ruled in the Appendix relevant to the specific car if applicable.

5 - Chassis Modifications

5.1 The two triangular chassis fillers and their locating pins must be removed.

5.2 The two caps on the side screw receptacles of the EVO 6 chassis may be removed.

5.3 The front axle supports SP07 are optional and may be glued.

5.4 Holes may be drilled (2mm. diameter) to have access to the grub screws of the spring suspension kit .

5.5 The Pick Up housing may be reinforced using a plastic or metallic ring or a glued wire.

5.6 The installation either of the C-Bushings or the spherical bushings CH14 or CH 56 into the chassis front axle receptacles is optional.



6 - Motor Chassis

6.1 Only the CH29 0 offset motor chassis in its new form with 4 screw holes and in the old type, or the CH61 EVO6 AW offset 0 motor chassis are legal.



6.1.1 The motor chassis code CH76 is not legal

6.1.2 Side protrusions of the CH 61 can be trimmed out

CH29 offset 0

CH61 EVO6 AW offset 0

6.1.3 The motor positioning retainer must not be glued to the motor chassis.



motor positioning retainer

6.2 One stopper (PA25 or PA57) at the least must be used at the rear axle.

6.2.1 A second stopper at the rear axle (PA25 or PA57) is legal.



PA25

PA 57

6.3 The two original spherical bushings CH14 or CH 56 must be used installed in their original position.



CH14/ CH56 bushings

6.3.1 Bushings cannot be glued into their housing and must be free to rotate inside their housings.

6.4 Plastic retainers CH72 may be used on the side and rear screws fastening the chassis to the motor chassis.



7 – Gears

7.1 The 11 teeth pinion is handed out by the Race Organization. Legal codes are PS11 and/or PI6511E

7.2 Only crowns AW short hub GA Ergal, GA 26/27/28/29/30, crowns GA1626PI/27PI/28PI/29PI/30PI, crowns GA1524/25/26 and the GAe Light Ergal GA 1626e/27e/28e/29e/30e are permitted.



7.3 Crowns must not be glued to the axle

8 – Axles

8.1 Only Slot it manufactured axles are allowed.

8.1.1 The independent front axle PA39 and the SP17 brass eyelets may be used. One wheel must be secured by an M2 grub screw and the other must be retained through the brass eyelets (SP17) and an optional washer.



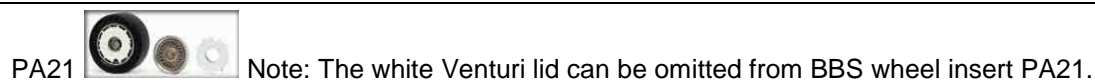
9 – Wheels

9.1 Front wheels must be any pair of PA17/PA24 (PI, Al, Mg) or WH1183-Mg

9.2 Rear wheels must be any pair of: PA17/PA24 (Al, Mg) or WH1183-Mg

9.3 Wheels cannot be glued to their axle. The surface of contact between wheels and tires must be clean of any coating.

9.4 Wheel covers are mandatory, and must be any of the Gr. C specific inserts.



10 – Tires

10.1 Slot it will hand out 1 set of rear tires directly to each Team.

18.1.1 Slot it will mark the tires allowing their identification from the hand out until the end of the Race.

18.1.2 Slot it will hand out the appropriate number of tire sets as a replacement to cover the entire race.

10.2 Rear tyres will be assembled under a scrutiner's surveillance during the pre-race verifications and lubrication can be done uniquely with liquids provided by the organizers.

10.2.1 The rear tires can be mounted on wheels with the Slot it identification either on the inside or the outside of the car.

10.2.2 Rear Tyres cannot be glued to the rim. No other substance can be used on tyres except for those provided by the organizers




10.3 Front tyres, visibly marked Slot.it, must cover the wheel entirely, must not have a diameter smaller than 16.7 mm and such diameter must be constant across the wheel's section.

10.4 Front tires surface cannot be coated and must remain bare.

10.5 The PT19 type is allowed as a front tire with a minimum diameter of 16,7 mm, constant across the wheel's section.



10.6 Rear tires selected for the specific Race as listed in the Tire Table

Tire Table		
Race: Spain, Iguazada  Tire F22- PT27	Race: Italy, Germignaga Verbano  Tire F22- PT27	Race: Belgium, Bruxelles  Tire Type: TBD

11 - Motor

11.1 The Motor will be the Slot.it MN013ch - Flat-6 S - 22500 RPM, handed out by the organization.



11.2 Slot it will hand out the motors to the Teams at the time of the Race.

11.3 Motors will be assigned by draw. The first motor is for installation during the "Parc Fermé". Additional spare motors, if allowed, should be handed out only upon request and just before the motor replacement.

11.4 Any manoeuvre to increase the performance of the motor is forbidden, including but not limited to running-in and using performance enhancement liquids.

11.5 The motor cannot be glued nor secured with tape to the motor chassis.

11.6 The motor must be installed the can opening facing up.

12 - Lighting Kit

12.1 The Lighting kit must be either the SP16 or SP06 type.

12.1.1 LEDs must be installed on the body accordingly to the light locations of the original model.

12.1.1.1 Exceptions are identified by the relevant car Appendix

12.1.1.2 Up to two front LEDs per side can be installed consistently with the position and number of the original model.

12.1.2 The SP 16 chip can be installed on the chassis or the motor chassis or the body or the Cockpit

12.1.2.1 the SP 16 capacitor can be unsoldered from the chip and installed separately on the chassis or the motor chassis or the body or the Cockpit.

12.1.3 The SP 06 base plate must be installed on the chassis

SP16



SP06



SMT typeLED



12.2 LEDs can be replaced with other LEDs or SMT LEDs

12.2.1 Front replacement LEDs must be either white or yellow. The colour scheme must be symmetrical.

12.2.1.1 Forward replacement LEDs must be round, 3 mm diameter max

12.2.1.2 Forward replacement SMT LEDs die must not exceed 3mm max size

12.2.2 Rear replacement LEDs must be red

12.2.2.1 The rear replacement LED shape must be round max diameter is 3 mm diameter, or rectangular 5.0 mm by 2.5 mm.

12.2.2.2 Rear replacement SMT LEDs die must not exceed 3mm max size

12.3 Lighting kit wires cannot protrude outside the body.

12.3.1 Lighting kit wires can be replaced with a different type of wires

12.4 A switch may be installed inside the car and operated from the outside

12.5 Connectors are allowed on all wirings of the Kit.

12.6 The Lighting Kit must be switched on at all times during the night stint.

12.6.1 A lighting kit having all installed LEDs working and remaining lit for 5 seconds after power removal is defined "Operational"

12.6.2 A lighting kit is "Operational-derated" if at the least one front LED and one rear LED are working at the same time and remain lit during 5 seconds after the main power removal.

12.6.3 The lighting Kit must be “Operational” during scrutinizng to be accepted for racing.

12.6.4 A car is allowed to race during the night stints without needing a repair as long as the Lighting kit is at least Operational-derated. If this minimum condition is not satisfied the Kit must be replaced or repaired.

12.6.5 At the end of the night stints, the lighting kit can be switched off or left on, however it must be in the car at all times and Operationally connected. No wiring cut is permitted.

13 – Washers, Spacers and Screws

13.1 Metallic spacers/washers may be used uniquely at selected locations.

13.1.1 on the forward axle between the axle support and the front wheel hub.

13.1.2 on the rear axle between the crown and the motor chassis and/or the Stopper and the motor chassis

13.1.3 under the screw's heads

13.2 Gluing washers is legal

13.3 Screws and Washers can be Slot it or free type, metallic only.

13.4 Suspensions screws CH59 are legal

14 – Suspension Kit

14.1 The installation of the spring suspension codes CH47, CH47b or the magnetic CH09 is legal at the rear of the Motor chassis and/or at the side of the EVO6 chassis.

14.1.1 Any full or partial combination of all the legal kits components is allowed.

14.1.2 The suspension configuration installed on the side points must be the same.

14.2 All Slot it coded springs and suspension magnets can be used. Any deformation is illegal.

14.3 the threaded part of the spring suspension screws and the grub screws, if installed, can be shortened

14.4 The nuts coupled to the suspension screws can also be the CH77 code or free type.



15 - Pick-up

15.1 Slot it CH26, CH10, CH66 and CH85 types only are legal



15.2 It is allowed to reduce the blade thickness and/or depth.

15.3 It is allowed to bevel the CH26 and CH66 forward end of the blade to make it similar to CH10.

15.4 It is allowed to use a grub screw in the dedicated receptacle located in the shaft of the CH66.

15.5 Grub screws may be inserted in the braid receptacles of the pick up.

16 - Power Cables, Braids and Eyelets

16.1 Power cables, braids and eyelets are free type

16.2 Power cables cannot be used to change the free riding height of the front axle or of the body.

16.3 Braids may be attached to the pickup through an eyelet, a screw or soldered to the power wires..

16.3.1 The eyelet can be inserted either in front or at the rear of the braids.

17 - Spares

17.1 Each team will hand to the Race Organization the spare parts within the limits stated by the Spare Parts Matrix. They will be kept by the organization, possibly separately from any repair tools and/or material, in a box dedicated to the specific Team and made available upon request during the Race.

Spare Parts Matrix

Pickup	3	Chassis (All parts must be present and can be already assembled and glued if multi pieces chassis)	1
Braids, Eyelets	No limit	(* Motor chassis with bearings	2
Power cables	No limit	(* Lighting kit	1
(* Crowns	4	(* Magnetic suspension set	2
(* Rear wheels (couples)	6	(* Spring suspension set	2
(* Pinion Z11 Slot it coded	3	Grub screws and Screws	No limit
(* Wheel covers (couples)	4	Spacers and washers	No limit
(* Front wheels(couples)	4	LEDS	No limit
(* Windshield	4	(* Rear wings	4
(* Axles	4	(* Front tires (couples)	2
(* Stoppers	2		

(*) Slot it Coded only

17.2 Slot it may request to the teams to store the spare Motor and tires in a dedicated box

17.3 Any chassis and motor chassis must pass the verification of the Race Director to be accepted as a replacement.

17.4 Spares cannot be sub assembled except as stated in sub-paragraphs 17.4.1 and 17.4.2 here below:

17.4.1 The braids can be sub-assembled on the pick-up.

17.4.2 All components of a multi-pieces chassis can be pre-assembled and glued.

18 - Repair and Replacement

18.1 The body cannot be replaced but only repaired.

18.2 Should the body break in pieces during the race, all of the broken and loose parts for which the max dimension exceeds 10mm. length size, must be put back in place as close as possible to their original position by glue or tape.

18.3 The race Director has the right to waive or enforce the repair whether or not the minimum weight is affected.

18.4 The rear wing must be either repaired or replaced when broken or lost. Once all spares have been used, it must be repaired.

18.5 The windshield must be either repaired or replaced when broken or lost. Once all spares have been used, it must be repaired.

18.6 Front light glasses, side windows may not be repaired or replaced.

18.7 The chassis that fails to pass the scrutinizing cannot be repaired. It must be replaced with a new chassis consistent with the car model and that will be handed out by Slot it.

18.8 Should a chassis break in pieces, it must be repaired or replaced if the broken part gives shape to its external perimeter and is adjacent to the body contour.

18.7.1 If the broken part is lost, the Race Director has the right to enforce the repair or let the chassis as is. He can also enforce the chassis replacement if he so deems necessary

18.9 In case of any break-up of the motor chassis, this part must be replaced

18.10 Wheel covers must be on during the whole race. If lost they must be replaced

19 - Magnets

19.1 No magnets are allowed except for the original ones of the motor and magnetic suspension

20 - Ballast

20.1 The only ballast allowed is the SP23 (2.5 grams) not modified and installed in its dedicated housing on the motor chassis.



21 - Power supply and Hand Throttle

21.1 Track voltage will be approximately in the range 11.5V-13.0V stabilized DC

21.2 The Throttle must not feature an output voltage higher than the max supply voltage or lower than the ground of the supply

21.3 The Hand Throttle can be replaced during the race.

22 - Penalties

22.1 The Race Director is the unique entity fully empowered to impose any penalty due for the infringement of this Regulation during all phase of the race since the opening of the Event.

22.2 Slot It reserve the right of imposing penalties to drivers and or Teams in case of infringement of the Technical Rules and/or the Race regulations. Penalties will be imposed at European Championship Level only.

Slot.it European Endurance Championship 2013

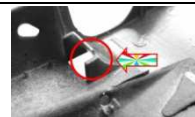
Race	Entitled Cars
Igalada	Porsche 962 KH
	Mercedes C9
	Lancia LC2 / 84
	Mazda 787
Verbano	Porsche 956 C
	Jaguar XJR12
	Lancia LC2 / 85
	Porsche 962 IMSA
Bruxelles	Porsche 956 KH
	Porsche 962C
	Jaguar XJR6/9
	Toyota 88C

Appendix - Porsche 956 & 962



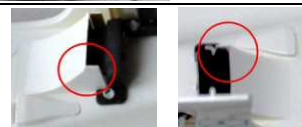
PO.1 - All types must be fitted with the cockpit code CH43 or CH81

PO.2 - Type 956 only. It is allowed to modify the body to avoid collision with the pinion.



PO.3 - Type Porsche 962 KH

It is allowed to trim the rear right and left hand side air intakes to avoid collision with the motor casing and the pinion.



Appendix - Jaguar XJR6/9 LM & XJR12



JA.1 - All types. It is allowed to modify the rear of the body to remove the interference with the suspension.

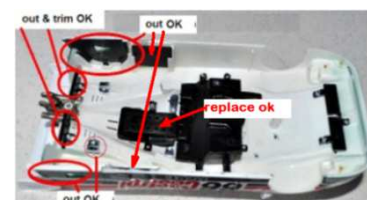
JA.2 - All types. Removal of the rear wheel covers and (XJR9 only) removal of the corresponding interlock plastic receptacles on the body.

JA.3 - All types. Removal of the rear protrusions for Light kit wire holding and the rear truss installation

JA.4 – XJR6/9 only. Removal of the part attached to the main body at the rear left location to avoid collision with the crown.

JA.4.1 XJR6/9 only. Replacement of the central plate with the flat type

JA.4.2 XJR6/9 only. Removal of the two side plates



JA.5 - the front photo etched lip in the XJR12 can be removed



JA.6 – The allowed zone for the installation of the rear LEDs is shown in the picture.



Appendix - Lancia LC 2



LA.1 – All models. The Le Mans number lights can be omitted.

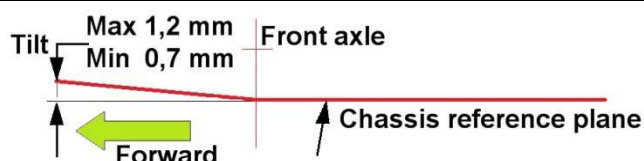
LA.2 – All models. The allowed zone for the installation of the rear LEDs is shown in the picture.



LA.3 – LC2/85 only. The cockpit's dashboard may be trimmed for a proper fit and to avoid collision with the windshield.







LA.4 LC2/85 only. The chassis forward of the front axle deviates from flatness. Such part is tilted upward and must follow the shape shown in the picture





Appendix - Mazda 787 B



<p>MA.1 - It is allowed to remove the rear frame.</p>		<p>MA.2 - It is allowed to remove the forward hook from the chassis</p>	
<p>MA.3 – The allowed zone for the installaton of the rear LEDs is shown in the picture.</p>		<p>MA.4 – It is allowed to trim the air intake inside where shown</p>	

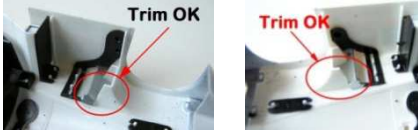
Appendix - Mercedes C9



<p>ME.1 - if the suspension is used, the plastic parts which interfere with the suspension can be removed. The rear wing and its support cannot be altered.</p>	
<p>ME.2 -The old fixing tabs used to attach the exhaust to the body can be removed.</p>	
<p>ME.3 – Exhausts may be removed when the model is used with the EVO6 chassis and the CH61 motor mount.</p>	
<p>ME.4 - the vertical fins of the parts reproducing the rear brake air intakes can be trimmed to avoid any interference with the rear tyres.</p>	
<p>ME.5 – The cockpit coded CH80 is legal</p>	

Appendix - Toyota 88 C



<p>TO.1 – It is not allowed to remove the original chassis painting at the side air intakes, if present</p>	
<p>TO.2 - It is allowed to trim the rear right and left hand side air intakes to avoid collision with the motor casing and the pinion as shown</p>	

Revision and Applicability Table

Revision	Status	Release Date	Applicability	Changes
2013.1	released	28/2/2013	obsolete	First Release
2013.2	released	14/3/2013	14/3/2013	Paragraph 1.7 modified Paragraph LA.4 modified