Liaison with TC69

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Current status of standardization activities on EMC in TC69

- IEC61851-21-1 :
  Electric vehicle conductive charging system –
  Part 21-1: Electric vehicle on-board charger EMC requirements
  for conductive connection to an a.c./d.c. supply
  - Current status: CDV (closing date for voting 2015-04-24)
  - Voting result: Approved (major change in the meeting 2015-11)

- IEC61851-21-2 :
  Electric vehicle conductive charging system –
  Part 21-2: EMC requirements for OFF board electric vehicle charging systems
  - Current status:4th CD (closing date for comments 2016-02-19)
  - Comments received: 75 comments from 6 countries

- IEC61980-1 :

  Electric vehicle wireless power transfer systems (WPT)
  Part 1: General requirements
  - Current Status IS (1st Edition published 2015-10)

Timeline planed

Standard number (Project number)	Ed.	Current status	WD	CD	CDV	FDIS	IS
IEC61851-21-1	Ed.1	CDV			2015-01	2016-01	2016-05
IEC61851-21-2	Ed.1	4th CD		2015-11	2016-06	2016-11	2017-03
IEC61980-1	Ed.1	IS					2015-10
	Ed.2	WD		2016-12			2019

IEC61851-21-1

Emission

Test	Reference
Harmonics	IEC 61000-3-2, IEC 61000-3-12
voltage changes, voltage fluctuation, flicker on AC mains	IEC61000-3-2 IEC61000-3-12
RF conducted emission at AC or DC power lines	IEC61000-6-3
RF conducted emission at communication port	IEC61000-6-3(CISPR22)
RF radiated emission	QP (dB(μV/m) Vehicle 30-75(MHz):32(10m), 42(3m) 75-400(MHz):32-43(10m), 42-53(3m) 400-1000(MHz):43(10m), 53(3m) ESA 30-75(MHz):62 to 52 75-400(MHz):52 to 63 400-1000(MHz):63

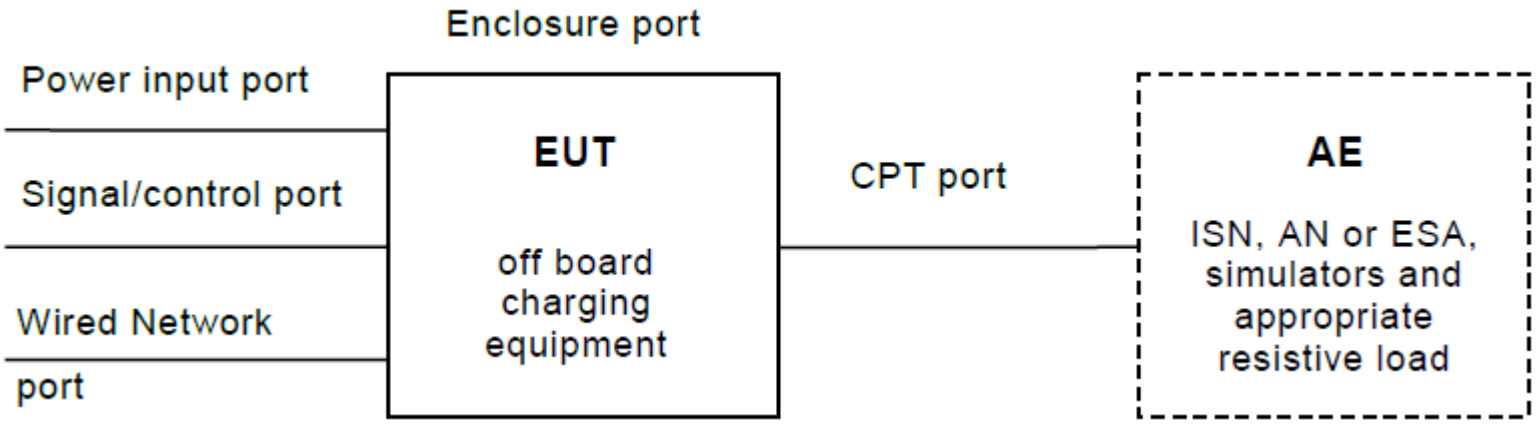
Immunity

	Reference
~~voltage dips and interruptions~~	~~IEC 61000-4-11~~ ~~IEC 61000-4-34~~
EFTB	IEC 61000-4-4.
Surge	IEC 61000-4-5
~~ESD~~	~~ISO10605~~
Immunity to radiated RF-fields	ISO 11451-2 ISO 11452-2 ISO 11452-4
Immunity to Pulses on Supply Lines	ISO7637-2

FDIS is being prepared

IEC61851-21-2

129 This standard covers off board charging equipment covering mode 1, mode 2, mode 3 and
130 mode 4 charging as defined in IEC 61851-1.



Immunity tests for AC charger

Port	test	Reference	remarks
enclosure	ESD	IEC61000-4-2	
	Radiated RF fields	IEC61000-4-3	80MHz-2.7GHz
	H fields	IEC61000-4-8	
Power input(AC)	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz
	Voltage dip/interruption	IEC61000-4-11,34	
Wired Network/ signal/control	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz
CPT	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz

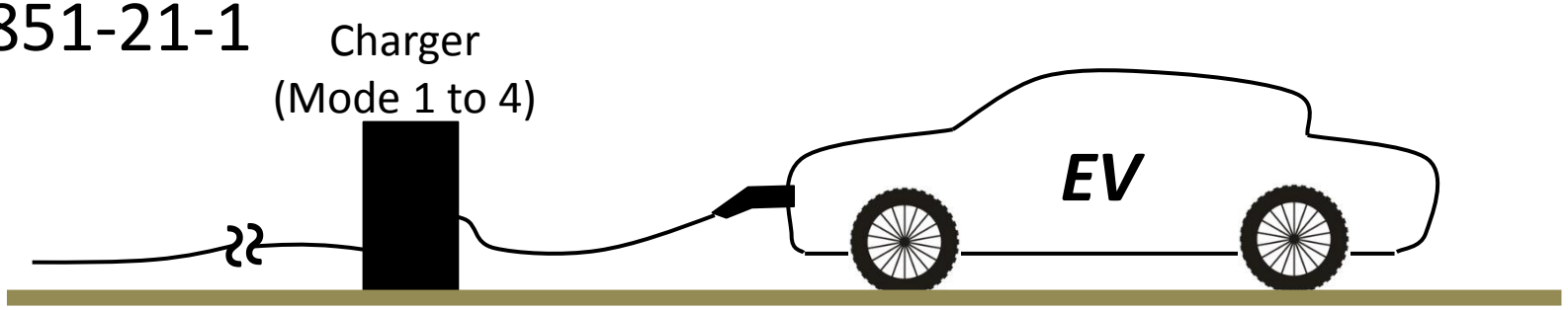
Immunity tests for DC charger

Port	test	Reference	Freq.
enclosure	ESD	IEC61000-4-2	
	Radiated RF fields	IEC61000-4-3	80MHz-2.7GHz
	H fields	IEC61000-4-8	
Power input(AC)	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz
	Voltage dip/interruption	IEC61000-4-11,34	
Power input(DC)	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz
Wired Network/ signal/control	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz
CPT	EFT/B	IEC61000-4-4	
	Surge	IEC61000-4-5	
	Conducted RF fields	IEC61000-4-6	0.15MHz-80MHz
	Transients	Informative Annex F (ISO7637-4)	

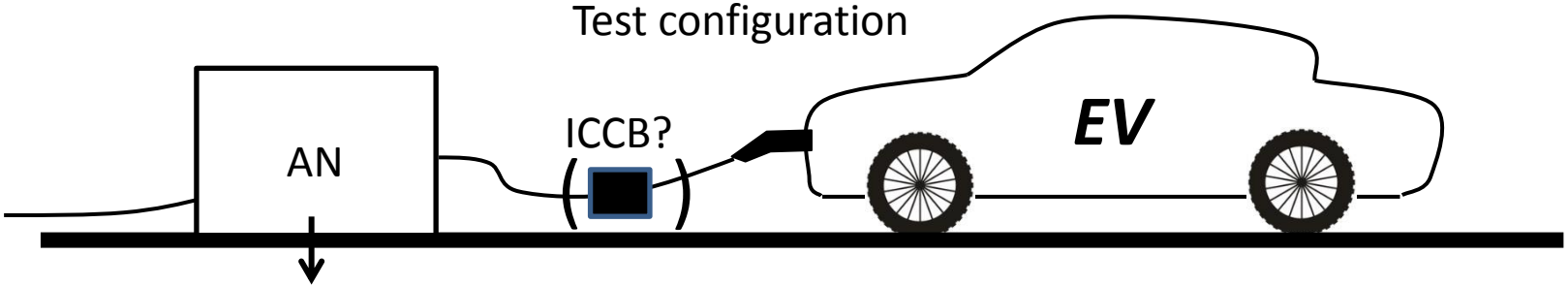
Emission measurements for AC or DC charger

Port	Test	Reference	Freq.
Power input (AC)	Harmonics	IEC61000-3-2, 12	
	Flicker	IEC61000-3-3, 11	
	Conducted disturbances	(CISPR11)	150 kHz - 30 MHz
Enclosure	Keyless entry	-	2 kHz - 185 kHz
	Radiated disturbances	(IEC/CD61000-6-3,-4)	30MHz-(6GHz)
Wired Network/ signal	Conducted disturbances	CISPR32	150 kHz - 30 MHz
CPT	Conducted disturbances	(CISPR11)	150 kHz- 30 MHz
	Transient/surge emissions	-	

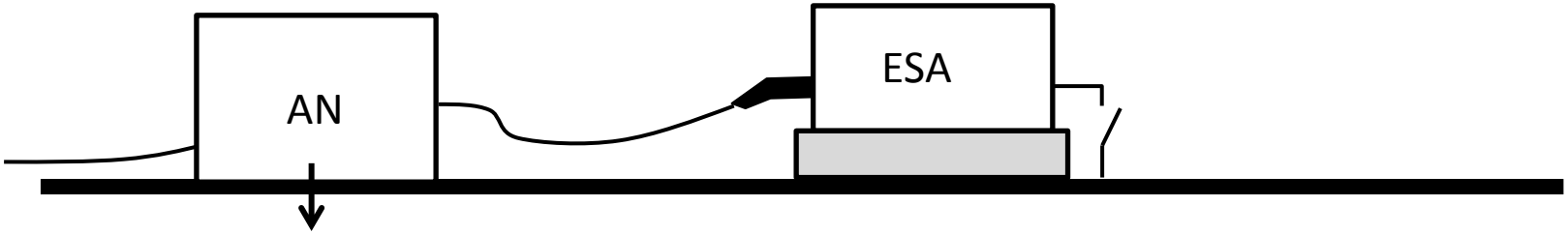
IEC61851-21-1



Test configuration

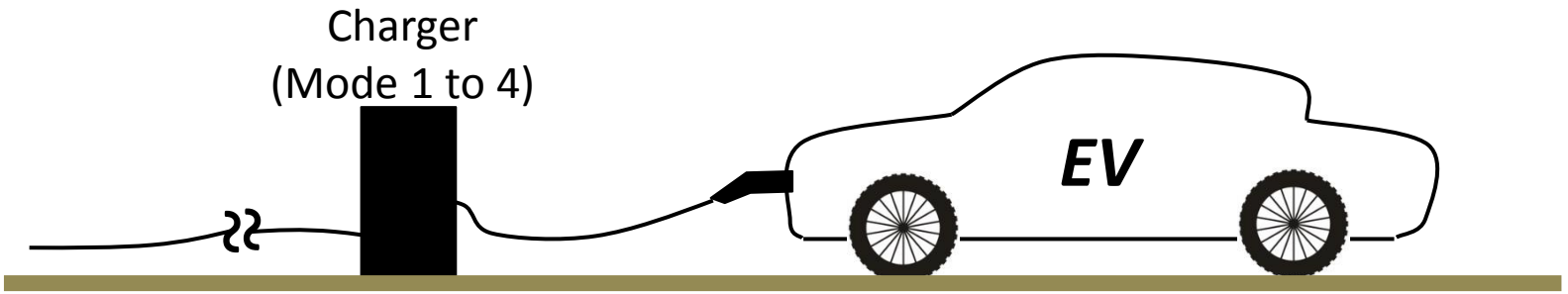


AC : AMN(50mH/50Ω)
DC : CISPR25 AN (5mH/50Ω/1uF)
Communication: AAN

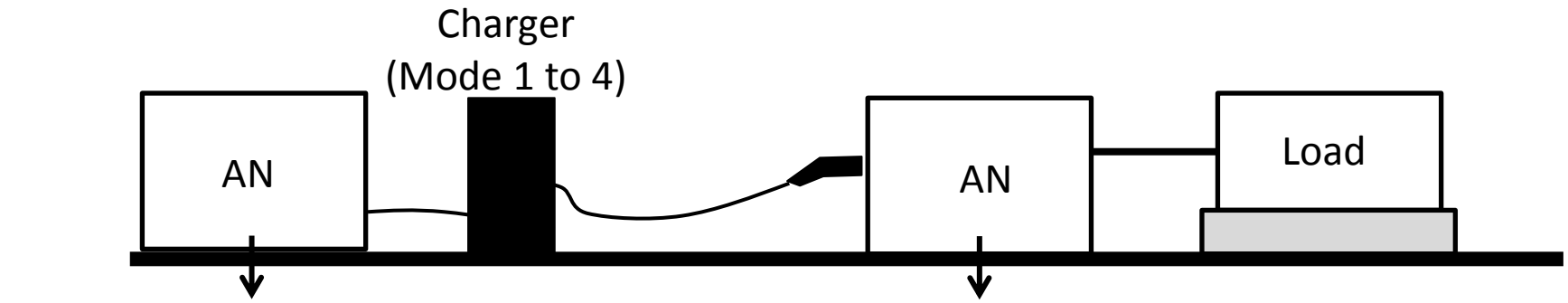


AC : AMN(50mH/50Ω)
DC : HV-AN (5mH/50Ω/0.1uF/1MΩ)
Communication: AAN

IEC61851-21-2



Test configuration



AC : AMN(50mH/50Ω)

AC : AMN(50mH/50Ω)
DC : CISPR25 AN (5mH/50Ω/1uF)
Wired network : AAN