

# ANNUAL REPORT 2021

NSAI TECHNICAL COMMITTEES (NSAI/ETC/TC 02)

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#### 1 Chairman's Statement

The previous Chair of NSAI/ETC/TC 02 Charles Dunn stepped down from the committee in December 2020. I took over as Chair of NSAI/ETC/ TC 02 in January 2021. On behalf of NSAI/ETC/TC 02, I would like to thank Charles on his professionalism, hard work and commitment throughout his tenure. The year continued to be a difficult year because of covid 19, and meetings continued online under the professional guidance of NSAI staff. The 1st February 2021 saw a significant transition date for I.S. 10101. All new designs had to be carried out to I.S. 10101 from this date. In response to this transition date NSAI promoted a PR campaign with Minister (Damien English) holding a copy of I.S. 10101 – this appeared on social media platforms such as Facebook, twitter and LinkedIn. Sales figures for I.S. 10101 reached 7,979 in November 2021. The next big transition date in relation to I.S. 10101 will be the 31st July 2022. This is the last date that electrical works can be certified to ET 101. There will need to be an awareness campaign to remind the industry of this deadline. Safe Electric published the RECI on site Guide to I.S. 10101 in June 2021.

There has been a significant amount of work carried out by the working groups under NSAI/ETC/TC 02 throughout 2021.

Working Group (WG1) = Wiring Rules (I.S. 10101)

WG1 met regularly to review existing rules, and to propose amendments or corrigenda. WG1 also reviews forthcoming IEC and CENELEC documents, which will eventually become harmonized documents in the HD 60364 series and will therefore need in future to be incorporated into I.S. 10101.

Working Group (WG2) = extra low voltage

WG2 was establishing to review the scope of I.S. 10101 in relation to extra low voltage. The scope of I.S. 10101 is described as covering all wiring from 0v to 1000v. WG 2 was made dormant after NSAI/ETC/TC 02 meeting on  $18^{th}$  February 2021 after confirmation received from IEC / TC 64 that the IEC 60364 series covers all electrical installations from 0v

Working Group (WG3) = electric vehicles charging

WG3 was established to coordinate suppliers, designers, distributors, contractors and regulatory bodies to review wiring to charging units for electric vehicles. The existing rules in I.S. 10101 emanate from HD 60364 section 722. WG3 have carried out a review of the latest HD 60364 section 722 and are reviewing current practice in Ireland, and any proposed changes required to the existing rules in I.S. 10101. They have met regularly throughout the year. WG3 have also carried out a risk assessment of EV charging systems.

Working Group (WG Queries)

This WG was established following on from the NSAI/ETC/TC 02 meeting on 15<sup>th</sup> April 2021, to prepare proposed responses to open queries in relation to the national wiring rules. The WG prepare proposed responses which are then considered at the next NSAI/ETC/TC 02 meeting. The establishment of this WG has streamlined the query process and has allowed the NSAI/ETC/TC 02 meetings to focus more on international standardization matters.

An action identified in the strategic business plan for NSAI/ETC/TC 02 was to improve Ireland's attendance at international events, by encouraging membership on IEC and CENELEC committees. There have been improvements in this area throughout the year with a number of members attending international meetings and participating in international committees. The secretary of NSAI/ETC/TC 02 in particular has attended a significant number of meetings throughout the year.

A good relationship has developed with IET JPEL/64 UK and NSAI/ETC/TC 02. IET JPEL/64 members attend NSAI/ETC/TC 02 online meetings and advise on the progress in relation to UK wiring rules BS 7671. NSAI/ETC/TC 02 members also attend JPEL 64 committee and subcommittee meetings.

Attendance at NSAI/ETC/TC 02 meetings has been high, despite the effect of the Covid-19 virus and the switch to online meetings. Interest and involvement from the electrical industry has grown significantly.

Incoming technical queries relating to wiring rules (emails to <u>wiringrules@nsai.ie</u>) have been streamlined and the process has been improved with the establishment of the Query WG.

The Business plan for NSAI/ETC/ TC 02 was agreed at the November meeting of NSAI/ETC/TC 02.

Finally, I would like to thank NSAI/ETC/TC 02 Secretary Amanda-Jane Gainford for her guidance and professionalism throughout the year, which has made the role of chair much easier.

### 2 Introduction

NSAI/ETC/TC 02 is responsible for the maintenance and revision of the national standards for electrical installations in residential, commercial and industrial premises up to and including 1kV a.c.. NSAI/ETC/TC 02 also provides interpretation of the rules when requested.

The National Wiring Rules are a national standard. They are recognised in common law as the state of the art and are recognised by the Health and Safety Authority (HSA) as means of complying with the Electricity Regulations. Similarly, ET 101 is cited in the Building Regulations as the electrical installation wiring standards required in order to comply with the statutory requirements. Moreover, ET 101 has formally been recognised by the Commission for Regulation of Utilities (CRU) as the technical rules to be observed by registered electrical contractors (RECs). In 2020 with the publication of I.S. 10101, ET 101 starts to be replaced as the National Rules for Electrical Installations. There is a <a href="transition period">transition period</a> outlined by the CRU for the adoption of I.S. 10101.

The National Wiring Rules are prepared in consultation with the regulator, the inspectorate, contractors, designers, and a broad range of electrical industry experts. This collaboration ensures that national consensus exists, which is the most important aspect of the work of ETC/TC 02. A major feature of the work is the obligation and privilege to participate with both European and international standards bodies, namely CENELEC and IEC. ETC/TC 02 engages with CENELEC TC64 and IEC TC64. TC64 being the expert body for "Electrical installations and protection against electric shock". ETC/TC 02 works to ensure that Irish concerns are considered

during in the creation and maintenance of rules at IEC and CENELEC level. ETC/TC 02 is also responsible for the adaption and adoption of the resultant harmonization documents created at this level into the National Wiring rules for Ireland.

# 3 Scope of TC

The primary scope of the committee is to mirror the work of the following international committees:

Committee Name	Committee Title
IEC TC64	Electrical installations and protection against electric shock
CLC TC64	Electrical installations and protection against electric shock

NSAI ETC TC2 is responsible for the development, maintenance and revision of a coherent set of national standards and other deliverables for electrical installations in residential, commercial and industrial premises, including the preparation, maintenance and revision of Standards, Codes of Practice and Guides dealing with electrical installations up to 1000V.

The committee has assumed responsibility for the maintenance of ETCI publication ET 101 "National Rules for Electrical Installations".

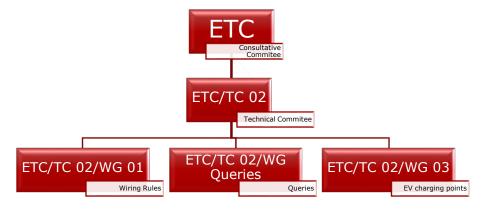
The latest version of the "National Rules for Electrical Installations" I.S. 10101 was published on the 6th of March 2020. The transition period from ET 101:2008 to I.S. 10101:2020 is outlined by the CRU in the <a href="link"><u>link</u></a>.

I.S. 10101 specifies the requirements for the design, erection, and verification of low-voltage electrical installations. This Standard is intended to provide for the safety of persons, livestock and property against dangers and damage, which may arise in the reasonable use of electrical installations, and to provide for the proper functioning of those installations.

# 4 Structure and Membership

#### 4.1 Structure

The Figure below illustrates the structure of the Committee:



#### 4.2 Members

The table below provides the members of the committee members for the year:

Organis	Role	
ACEI	Association of Consulting Engineers of Ireland	Committee member
AECI	The Association of Electrical Contractors	Committee member
CDETB	City of Dublin Education & Training Board	Committee member
CIBSE	Chartered Institution of Building Services Engineers	Committee member
CRU	Commission for Regulation of Utilities	Committee member
DCC	Dublin City Council	Chair
DKIT	Dundalk Institute of Technology	Committee member
DSO	Distribution Network Operator	Committee member
ECA	Electrical contractors Association in Ireland	Committee member
ECSSA	Electrical Contractors Safety & Standards Association Ireland Ltd	Committee member
<b>EMDA</b>	Electrical manufactures and Distributors Association	Committee member
EIFI	Electrical Industries Federation of Ireland	Committee member
	Engineers Ireland	Committee member
HSA	Health & Safety Authority	Committee member
HSE	Health Service Executive	Committee member
IET	Institution of Engineering & Technology	Committee member
<b>NECI</b> National Electrical Contractors Ireland		Committee member
NSAI National Standards Authority of Ireland		Secretary
OPW	Office of Public Works	Committee member
SEAI	Sustainable Energy Authority of Ireland	Committee member
Solas	Future Education and Training	Committee member
TUD	Technical University Dublin	Committee member
	Safe Electric	Committee member
	John Clare Training	Committee member
Liaison	Liaison NSAI/ETC/TC 20	National observer
Liaison	Liaison NSAI/ETC/TC 10	National observer
Liaison	Liaison NSAI/ETC/TC 06	National observer
Liaison	Liaison NSAI/ETC/TC 03	National observer
Liaison	IET/JPEL 64	Special Observer

# 4.2.1 Members NSAI/ETC/TC 02/WG 01

Organi	sation	Role
DCC	Dublin City Council	Chair
DSO	Distribution Network Operator	Committee member
<b>ECA</b>	Electrical contractors Association in Ireland	Committee member
<b>ESBI</b>	Electricity Supply Board	Committee member
	Engineers Ireland	Committee member
	Geoghegan Electrical	Committee member
NECI	National Electrical Contractors Ireland	Committee member
NSAI	National Standards Authority of Ireland	Secretary
TUD	Technical University Dublin	Committee member
	Safe Electric	Committee member
<b>HSA</b> Health & Safety Authority		National observer

HSE	Health Service Executive	National observer
Liaison	Liaison NSAI/ETC/TC 10	National observer

# 4.2.2 Members NSAI/ETC/TC 02/WG 03

Organis	ation	Role
ACEI	Association of Consulting Engineers of Ireland	Committee member
<b>AECI</b>	The Association of Electrical Contractors	Committee member
CRU	Commission for Regulation of Utilities	Committee member
DCC	Dublin City Council	Committee member
DCCAE	Department of the Environment, Climate and Communications	Committee member
DSO	Distribution Network Operator	Committee member
	Eninserv Limited	Committee member
<b>ESBN</b>	Electrical Supply Board Networks	Committee member
	EV Charging Ireland	Committee member
EVCIA	Electric Vehicle Charger Installers Association of Ireland	Committee member
HES	Harrington Electrical Services	Committee member
HSE	Health Service Executive	Committee member
IET	Institution of Engineering & Technology	Committee member
NSAI	National Standards Authority of Ireland	Secretary
SEAI	Sustainable Energy Authority of Ireland	Committee member
TUD	Technical University Dublin	Committee member
WA	Western Automation	Committee member
	Safe Electric	Committee member
	John Claire Training Itd	Committee member
Liaison	Liaison NSAI/ETC/TC 10	Committee member

# 4.2.3 Members NSAI/ETC/TC 02/WG Queries

Organis	sation	Role
DCC Dublin City Council		Committee member
<b>DSO</b> Distribution Network Operator		Committee member
	Engineers Ireland	Chair
<b>ESBN</b>	ESB Networks	Committee member
HSE	Health Service Executive	Committee member
NSAI National Standards Authority of Ireland		Secretary
TUD	Technical University Dublin	Committee member
	John Clare Training	Committee member
	Liaison NSAI/ETC/TC 10	Committee member

# 5 Summary of 2021 Activities

#### 5.1 National

### 5.1.1 Meetings NSAI/ETC/TC 02

In 2021, all meetings were held virtually. ETC/TC 02 meetings were typically hosted in the mornings. Where issues would benefit from longer consideration, then these were often carried over to working group meetings held later in the day. Committee members attended the following National meetings as follows.

Meeting No.	Date	Minutes Reference
1	21st January 2021	<u>N2073</u>
2	18 <sup>th</sup> of February 2021	<u>N2090</u>
3	18 <sup>th</sup> of March 2021	<u>N2117</u>
4	15 <sup>th</sup> of April 2021	<u>N2131</u>
5	20 <sup>th</sup> of May 2021	<u>N2178</u>
6	17 <sup>th</sup> of June 2021	<u>N2203</u>
7	15 <sup>th</sup> of July 2021	<u>N2282</u>
8	16 <sup>th</sup> September 2021	<u>N2262</u>
9	21st October 2021	<u>N2288</u>
10	18 <sup>th</sup> November 2021	<u>N2309</u>

# 5.1.2 Meetings NSAI/ETC/TC 02/WG 01

Meeting No.	Date	Attendance	Minutes Reference
1	21st January 2021	N0083	N/A
2	18 <sup>th</sup> of February 2021	<u>N0086</u>	<u>N0085</u>
3	18 <sup>th</sup> of March 2021	N0088	<u>N0087</u>
4	15 <sup>th</sup> of April 2021	<u>N0090</u>	<u>N0089</u>
5	20 <sup>th</sup> of May 2021	<u>N0091</u>	N/A
6	17 <sup>th</sup> of June 2021	N0094	N/A
7	15 <sup>th</sup> of July 2021	<u>N0096</u>	<u>N0095</u>
8	16 <sup>th</sup> September 2021	<u>N0098</u>	<u>N0097</u>
9	21st October 2021	<u>N0100</u>	<u>N0099</u>
10	18 <sup>th</sup> November 2021	<u>N0102</u>	<u>N0101</u>

# 5.1.3 Meetings NSAI/ETC/TC 02/WG 03

Meeting No.	Date	Minutes Reference
1	19 <sup>th</sup> January 2021	<u>N0027</u>
2	2 <sup>nd</sup> February 2021	<u>N0038</u>
3	23 <sup>rd</sup> February 2021	<u>N0046</u>
4	9 <sup>th</sup> March 2021	<u>N0056</u>
5	30 <sup>th</sup> March 2021	<u>N0067</u>
6	13 <sup>th</sup> April 2021	<u>N0072</u>
7	27 <sup>th</sup> April 2021	<u>N0078</u>
8	11 <sup>th</sup> May 2021	<u>N0086</u>
9	25 <sup>th</sup> May 2021	<u>N0092</u>
10	8 <sup>th</sup> June 2021	<u>N0097</u>
11	22 <sup>nd</sup> June 2021	<u>N0103</u>



# NSAI/ETC/TC 02 "Electrical Installations"

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12	6 <sup>th</sup> July 2021	<u>N0108</u>
13	20 <sup>th</sup> July 2021	<u>N0114</u>
14	14 <sup>th</sup> September 2021	<u>N0121</u>
15	28 <sup>th</sup> September 2021	<u>N0129</u>
16	12 <sup>th</sup> of October 2021	<u>N0133</u>
17	2 <sup>nd</sup> November 2021	<u>N0138</u>
18	30 <sup>th</sup> November 2021	<u>N0146</u>
19	15 <sup>th</sup> December 2021	<u>N0150</u>

#### 5.1.4 Meetings NSAI/ETC/TC 02/WG Queries

Meeting No.	Date
1	10 <sup>th</sup> May 2021
2	9 <sup>th</sup> June 2021
3	13 <sup>th</sup> September 2021
4	18 <sup>th</sup> October 2021
5	12 <sup>th</sup> November 2021

#### 5.1.5 National Work

The key focus for ETC/TC 02 in 2021 was promoting the New National Rules for Electrical Installations I.S. 10101.

NSAI maintained a FAQs page for the launch of I.S. 10101. This page is maintained by NSAI.

ETC/TC 02 meetings include agenda items for liaising with other NSAI committees, including receiving presentations and providing technical replies to queries.

The regular works of considering public queries in relation to the existing ET 101 & I.S. 10101 continued, as well as reviewing forthcoming proposals from CENELEC and IEC for which Ireland has a vote. A dedicated workgroup met regularly throughout the year to review the text of new HD document clause by clause to see the impact on I.S. 10101.

ETC/TC 02 membership has remained strong throughout 2021, with attendances at an all-time high, and enquiries from non-members seeking to get involved.

# 5.2 International/Regional

#### 5.2.1 Meetings

Committee Members attended international CENELEC (CLC) and IEC meetings as follows:

Meeting No.	Committee Name	Location	Date
1	IEC/TC 64/ Plenary	Virtual	23 <sup>rd</sup> – 25 <sup>th</sup> November 2021
2	IEC/TC 64/MT 2	Virtual	18 <sup>th</sup> January 2021
3	IEC/TC 64/MT 1	Virtual	27 <sup>th</sup> & 28 <sup>th</sup> January 2021
4	IEC/TC 64/MT 2	Virtual	16 <sup>th</sup> March 2021
5	IEC/TC 64/MT 9	Virtual	23 <sup>rd</sup> -25 <sup>th</sup> March 2021
6	CLC/TC 64/ Plenary	Virtual	7 <sup>th</sup> & 8 <sup>th</sup> April 2021
7	IEC/TC 64/MT 1	Virtual	12 <sup>th</sup> & 13 <sup>th</sup> of April 2021
8	IEC/TC 64/MT 2	Virtual	15 <sup>th</sup> & 16 <sup>th</sup> June 2021

9	IEC/TC 64/MT 1	Virtual	31 <sup>st</sup> August & 1 <sup>st</sup> September 2021
10	CLC/TC 64/WG 2	Virtual	5 <sup>th</sup> June 2021
11	IEC/TC 64/MT 40	Virtual	May 2021
12	IEC/TC 64/MT 4	Virtual	May 2021

Ireland is fortunate to have a seat at CENELEC & IEC and will need to work to hold its high standing in international circles. The meetings demonstrate how the speed and volume of electrical standardisation has gown, and how countries have evolved their organisations to respond to the rapidly changing electrical environment.

Members of NSAI/ETC/TC 02 also joined IET JPEL/64 meetings.

Meeting No.	<b>Committee Name</b>	Location	Date
1	JPEL/64	Virtual	10 <sup>th</sup> February 2021
2	JPEL/64/D	Virtual	11 <sup>th</sup> February 2021
3	JPEL/64/C	Virtual	17 <sup>th</sup> February 2021
4	JPEL/64/D	Virtual	25 <sup>th</sup> February 2021
5	JPEL/64/A	Virtual	1 <sup>st</sup> March 2021
6	JPEL/64/D	Virtual	4 <sup>th</sup> March 2021
7	JPEL/64/A	Virtual	22 <sup>nd</sup> March 2021
8	JPEL/64/A	Virtual	24 <sup>th</sup> May 2021
9	JPEL/64/D	Virtual	28 <sup>th</sup> May 2021
10	JPEL/64/A	Virtual	21 <sup>st</sup> June 2021
11	JPEL/64/B	Virtual	22 <sup>nd</sup> June 2021 (PD)
12	JPEL/64/C	Virtual	9 <sup>th</sup> September 2021 (BR, JK)
13	JPEL/64	Virtual	29 <sup>th</sup> September 2021
14	JPEL/64/B	Virtual	19 <sup>th</sup> October 2021 (BR)
15	JPEL/64/D	Virtual	20 <sup>th</sup> October 2021
16	JPEL/64/B	Virtual	24 <sup>th</sup> November 2021 (RE)
17	JPEL/64/D	Virtual	26 <sup>th</sup> November 2021 (RE)
18	JPEL/64/C	Virtual	30 <sup>th</sup> November 2021 (JK)
19	JPEL/64/A	Virtual	13 <sup>th</sup> December 2021 (DB)

#### 5.2.2 International/Regional Work

Members of the committee attended maintenance teams and working group meetings.

#### 5.2.3 International/Regional Standards Reviewed

All draft standards in the 60364-series issued by IEC TC64 and CLC TC64 to national mirror committees are received and considered by ETC/TC 02. Consideration includes how the proposed new standards affect the current National Rules for Electrical Installations ET 101 & I.S. 10101:2020.

#### 5.2.4 International/Regional Voting Results

ETC/TC 02 monthly meetings propose a vote where required for IEC or CENELEC documents, which NSAI submits to the relevant bodies.

The committee have actively voted on 14 documents in 2021 and have submitted 7 sets of comments.

Body	Vote Reference	Comments Submitted	Decision
IEC	64/2514/CD	Yes	Approve
IEC	64/2511/CD	Yes	Approve
IEC	64/2485/DC	Yes	Approve
IEC	64/2464/CD	Yes	Approve
IEC	64/2471/NP	No	Approve
IEC	64/2479/FDIS	No	Approve
IEC	64/2488/Q	No	Abstain
IEC	64/2493/Q	No	Abstain
IEC	64/2487A/NP	No	Approve
IEC	64/2490/NP	No	Abstain
IEC	64/2492/CD	No	Approve
IEC	64/2495/Q	Yes	Abstain
IEC	64/2498/Q	Yes	Approve
IEC	64/2499/Q	Yes	Approve

## 5.3 Regulatory Development/Update

The work of ETC/TC 02 is influenced by several European Directives including the Alternative Fuels Infrastructure Directive, the Construction Products Directive, the Low Voltage Directive, the Electromagnetic Compatibility Directive to name but a few. The National Rules for Electrical Installations must also align with Irelands Building Regulations, which requires liaison with the Department of the Environment. Continued pressure to reduce carbon footprint has implications on the wiring rules where new standards are being developed for alternative energies, and ETC/TC 02 members advanced liaison with ESB and SEAI to align regulations.

# 6 Irish Publications/Reviews

#### 6.1 Publications

No new publications were issued in 2021

#### 6.2 Reviews

The launch of I.S. 10101 is as a result of the review work carried out by ETC/TC 02. In 2020 the working group, NSAI/ETC/TC 02/WG 01 started the review of additional HD's which have been published which impact I.S. 10101. This work will be ongoing.

The following ETCI documents were reviewed by the committee in 2020 & 2021. The following decisions were made:

ET 101:2008/A3:2018	National Rules for Electrical Installations - Amendment No. 3	Withdraw in
ET 101:2008/AC:2018	National rules for electrical installations	line with the
ET 101:2008+A1&A2	National rules for electrical installations	ET 101 to

ET 107	National rules for inspection and certification of existing electrical installations for reconnection to the distribution system	I.S. 10101 Transition laid out by the CRU,
ET 204	Code of practice for control systems involving programmable electronic products and systems	31/07/2022
ET 205	Guide to the installation of extra-low voltage lighting systems	
ET 207 - 3rd ed	Guide to national rules for electrical installations	
ET 208	Code of practice for the design, selection and erection of LV switchboards for residential applications	
ET 210	Code of practise for the selection and installation of low voltage generators	
ET 211	Code of practise for public lighting installation in residential areas	
ET 212	Guidelines for extensions, additions and alterations to existing electrical installations	
ET 214	Guide to the selection and use of Residual Current Devices	
ET 206:2009A33:O34	The Management of Electrical Safety at Work	
ET 206A:2000	Procedural guidelines for working on electrical installations	Hand over
ET 213	Guide to the Basic Principles of Electrical Safety	to HSA
ET 215	Guide to the maintenance, inspection and testing of portable equipment (Electrical appliances and tools) in the workplace	
ET 103:2015	National Rules for Electrical Installations Power installations exceeding 1 kV a.c. (1.5 kV d.c.)	Withdrawn 01/11/2019
ET 105:2011	National Rules for Electrical Installations in Potentially Explosive Atmospheres (3rd Edition)	Withdrawn 26/11/2018
ET 201	Code of practice for the design, selection and erection of low voltage switchboards for industrial/commercial applications	Withdrawn 29/05/2020
ET 202	Guide to the selection of electrical apparatus for use in potentially explosive atmospheres	Withdrawn 16/11/2011
ET 209	A recommended maintenance & inspection routine for electrical installations in potentially explosive atmospheres	Withdrawn 16/11/2011

# 7 Work programme for 2022 onwards

The committee will be very busy in 2022. To deal with the workload they have formed three working groups.

- NSAI/ETC/TC 02/WG 01 "wiring rules"
  - The focus of this group is to review HD's which have been published since the cutoff date chosen for I.S. 10101.
- NSAI/ETC/TC 02/WG 03 "EV charging points"
  - This group are exploring the latest publication of HD 60364-722: 2018 to see what impact it has on I.S. 10101 and are considering earthing arrangements necessary for EV charging points.
- NSAI/ETC/TC 02/WG Queries
  - $_{\odot}$   $\,$  This group is charged with providing responses to queries received.

The main committee NSAI/ETC/TC 02 continue to review and input into proposed changes to the 60364 series of standards at both IEC 64 & CLC TC64 level.

The committee will continue to review queries from the public on I.S. 10101 and were possible provide guidance.

The committee will work with its assigned liaison officers to encourage greater collaboration between the Electrotechnical sector committees.

The committee would like to get more involved at IEC & CLC level and it is hoped that some members of the committee will join working groups or maintenance teams in 2021.

The committee have updated their business plan and plan to progress actions within the plan over 2022.

# 8 Additional Information

All meetings were held by MS teams in 2021 and in 2022 it is foreseen that meeting will continue remote for the first two quarters.