**INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES (IECEx SYSTEM)**

**TITLE: Compilation of comments on - ExTAG/638/CD – Draft ExTAG Decision Sheet –** **Ex m fault assessment**

**Circulated to: ExTAG – IECEx Testing and Assessment Group**

**INTRODUCTION**

This document contains the compilation of comments, as well as observations, from the originators CML/UL/FM, received on ExTAG/638/CD – Draft ExTAG Decision Sheet – Ex m fault assessment.

***Please inform the Secretariat immediately of any omissions or errors at-***

***Christine Kane***

***ExTAG Secretariat***

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| **ExCB/****ExTL** | **Clause/ Sub-clause** | **Paragraph Figure/****Table** | **Type of****comment****General/****technical/****editorial** | **COMMENTS** | **Proposed change** | **Observation****(to be completed by the originator)** |
| --- | --- | --- | --- | --- | --- | --- |
| **BIS****IN****In consultat-ion with****Intertek India Private Limited, Karandikar Laboratori-es Pvt. Ltd., and KL Certificati-on Services** |  |  | **te** | We believe, that the correct approach in the application of the requirements of Clause 7.2 ‘determination of Faults’, would be as outlined in answer 1 in this ExTAG.It will not be sufficient to only consider the ‘short’ and ‘open’ circuit, as there could be a state in between these two states wherein, the power dissipated in the components / tracks could be give us the worst case as far as thermal dissipation is concerned.However, in case there is a protective device like say a ‘fuse’ which will ensure that the supply will stop if such faults occur then it may be possible to even consider answer 2.Hence, we should always go by answer 1 and consider all kinds of faults unless, assessment shows that considering such faults maybe irrelevant. |  | **Accepted** |
| **DNV****NO** |  |  | **Gen** | **We agree with answer 1 in this draft decision sheet.** |  | **Accepted** |
| **ExTC****AU** |  |  | General | Our interpretation of the Standard corresponds to ANSWER 1 | ANSWER 2 is not correct as preventing exposure of components to combustible materials will not prevent heating of the component under fault considerations. | Comment accepted |
| **FIDITAS****HR** | - | - | T | **We support Answer 1** | Standard IEC 60079-18 in clause 7.2.1 Fault examination ask also “the most onerous condition shall be considered” so we think that Answer 1 is in line with the standard requirements. | **Accepted** |
| **FMG****US** |  |  | ge | Of the two answers provided, FMG would prefer Answer 2 as a better answer to the specific question asked. |  | **Accepted** |
| **FMG****US** |  |  | ge | Is there a reason that DS2015/002 has simply not been updated to reflect IEC 60079-18:2011 (Ed 3) and IEC 60079-18:2014 (Ed 4)? | Update DS2015/002 as necessary | This decision sheet is related to what fault conditions are to be applied whereas DS2015/002 considers segregation distances in more detail.  |
| **FMG****US** |  |  | ge | The TC/SC involved should be TC31/MT60079-18 as they are responsible for IEC 60079-18, not TC31/WG22. | Change “WG22” to “TC31/MT60079-18” if this Decision Sheet proceeds. | **Accepted** |
| **FTZU****CZ** |  |  | g | The Answer 1 is fully supported.We do not agree with the Answer 2. | The Answer 2 shall be removed.  | Answer accepted. Proposed change not accepted based on other comments. |
| **IBExU****DE** |  |  |  | We chose answer 1 |  | Accepted |
| **NANIO CCVE (RU)****ExCB/****ExTL** |  |  | General | We support the approach described in answer 1, but it should be noted that the standard details the criteria of infallibility, but the types of faults to be considered are not detailed (e.g. open circuit, short circuit, transition to any ohmic state, etc.).It is required to describe such criteria or to reference, e.g. those detailed in 60079-11. |  | Accepted. To be considered by MT60079-18 |
| **NCC****BR** | 7.2.2, 7.2.4 |  |  | We agree with answer 1. |  | Accepted |
| **NEPSI****CN** |  |  | G | 1. The subject standard should be changed as IEC 60079-18:2014;
2. For testing and assessment according to the standard IEC 60079-18 within IECEx, the choice to the question should be the Answer B;
3. For possible improvement of the existing standard, it is a good question, it can be a topic for next ExTAG meeting for discussion, or it can be transferred to MT 60079-18.
 |  | Subject amended to include standard.Answers accepted |
| **PTB****DE** |  |  |  | ANSWER 1: Yes, certain components at high risk of this mode of failure should be considered to fail such that they dissipate most power… | Answer 1 is the correct answer | Accepted |
| **QPSCA** |  |  |  | QPS supports answer 2. |  | Accepted |
| **SGS Baseefa****GB** |  |  |  | SGS Baseefa has some sympathy with Answer 2, but considers it to be a change in the requirements of the standard. Therefore Answer 1, of the choice of two, has to be applied.Answer 2 would appear to align with the requirements for Ex q, and the requirements for Ex m should, presumably, be more severe in looking at potential faults.On that basis, we would be in favour of MT 60079-18 looking carefully at these requirements for Ex m and considering if some (though not total) relaxation might be appropriate. |  | Answer 2 is how some ExTL’s are applying the fault assessment clauses, due to lack of clarity in the standard.To be discussed at MT 60079-18 |
| **Simtars****AU** |  |  |  | We believe that ‘Answer 1’ to be correct in complying with the standard.With such opposing choices, we agree with the comment from Bill Lawrence that this should be referred to MT60079-18 if the ‘fault conditions’ as described in 60079-18 are not clear enough. Particularly as the fault counts differ from Ex ma, mb and mc. | Rename ‘Answer 1’ to ‘Answer’.Remove ‘Answer 2’. | Comment accepted. Proposed change not accepted based on other comments |
| **TC 31** |  |  | Ge | **We support answer 2.****In the standard 60079-18, Ed. 3 in section 7.2.1 the following requirement “The failure of some components may result in an unstable condition, for example, alternating between high and low resistance. In those cases, the most onerous condition shall be considered.”****is given.** **Additionally the protection method relies on the use of encapsulation to prevent exposure of components to the combustible material.** **Considering components as failing only to short or open circuit is adequate when applying faults to the circuit for the purpose of determining the surface temperature of the encapsulation material.****To add the additional requirements given in Answer 1 is a significant technical change that may not be done in an IECEx DS.** | Delete Answer 1Rename Answer 2 to “Answer” | Comment accepted. Proposed change not accepted based on other comments |
| **TIIS****JP** | - | - | General | We support Answer 1. However, we do not think the sentences after 1st paragraph are　necessary. | ANSWER 1: Yes, certain components at high risk of this mode of failure should be considered to fail such that they dissipate most power.To delete subsequent sentences. | Comment accepted. Proposed change not accepted as these sentences help to explain the different approaches. |
| **UL** **USA** |  | answer | technical | UL agrees with answer #2 | Publish with answer #2. | Comment accepted. Proposed change not accepted based on other comments |