**3GPP TSG-WG SA2 Meeting #140E e-meeting *S2-200xxxx***

**Elbonia, August 19 – September 1, 2020 (revision of S2-200xxxx)**

**Source: Huawei, HiSilicon**

**Title: KI#6: evaluation and conclusion**

**Document for: Approval**

**Agenda Item: 8.7**

**Work Item / Release: FS\_ID\_UAS / Rel-17**

*Abstract: This contribution provides evaluations and conclusions for KI#6 UAV Controller and UAV association.*

# 1. Introduction/Discussion

The solutions of KI#6:UAV Controller and UAV association include solution #2, #5, #20 and #21. The following table provides an analysis and comparison, focusing on aspects of KI#6.

|  |  |  |
| --- | --- | --- |
| Solution | Evaluation | Impacts |
| Sol#2:3GPP reference architecture for UAV remote identification | Architecture solution, no specific details on how to address KI#6 | none |
| Sol#5:UAV authentication and authorization by USS/UTM based on NAS supplementary and secondary authentication and authorization procedures | UAV/UAVC pairing authentication and authorization is done by USS/UTM during NSSAA-like procedure or PDU session secondary authentication and authorization procedure, the result is notified to SMF or AMF or UFES | 1. PDU session secondary authentication and authorization procedure enhancements
2. New secondary authentication and authorization like NSSAA
3. UAV/UAVC pairing authentication and authorization result is notified to SMF or AMF or UFES
 |
| Sol#20:UAV and UAVC Association and Connectivity Control Using Secondary Authorization | UAV/UAVC pairing authentication and authorization is done by USS/UTM during PDU session secondary authentication and authorization procedure, the result is notified to SMF | 1. PDU session secondary authentication and authorization procedure enhancements
2. UAV/UAVC pairing authentication and authorization result is notified to SMF
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| Sol#21:Connectivity setup for C2 communication and association between UAV and UAV-C | Before PDU session setup, UAV/UAVC pairing authentication and authorization is done by USS/UTM and the result (including a UTID) is notified to the PLMN/UAV/UAVC. During PDU session setup, the PLMN re-authenticates the UAV/UAVC based on the result and the UTID. | 1. UAV/UAVC pairing authentication and authorization result and UTID is notified to SMF
2. PDU session establishment procedure enhancement
3. UTID
 |

**Proposal 1**: UAV/UAVC pairing authentication and authorization is done by USS/UTM during PDU session secondary authentication and authorization procedure, the result is notified to SMF.

**Proposal 2**: UAV/UAVC pairing authentication and authorization is done by USS/UTM during New secondary authentication and authorization procedure like NSSAA, the result is notified to UFES.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.754.

\* \* \* \* First change (all new) \* \* \* \*

# 7 Evaluation

## 7.6 Key Issue 6: UAV Controller and UAV association

Sol#2: this solution has no specific details on how to address this key issue.

Sol#5: this solution proposes that UAV/UAVC pairing authentication and authorization is done by USS/UTM during NSSAA-like procedure or PDU session secondary authentication and authorization procedure, the result is notified to SMF or AMF or UFES.

Sol#20: this solution proposes that UAV/UAVC pairing authentication and authorization is done by USS/UTM during PDU session secondary authentication and authorization procedure, the result is notified to SMF.

Sol#21: this solution proposed that UAV/UAVC pairing authentication and authorization is done by USS/UTM and the result (including a UTID) is notified to the PLMN/UAV/UAVC before PDU session setup, hence, the SMF can re-authenticate/authorizes the UAV/UAVC based on the result and the UTID during PDU session setup.

\* \* \* \* Second change (all new) \* \* \* \*

# 8 Conclusions

## 8.6 Key Issue 6: UAV Controller and UAV association

When separate PDU Sessions for C2 communication, or when there is a static association between UAV and UAVC then UAV/UAVC pairing authentication and authorization is done by USS/UTM during PDU session secondary authentication and authorization procedure, the result is notified to SMF.

In addition, UAV/UAVC pairing authentication and authorization can also be done by USS/UTM during new secondary authentication and authorization procedure like NSSAA if available, the result is notified to UFES.

\* \* \* \* End of changes \* \* \* \*