

## Copyright Notice

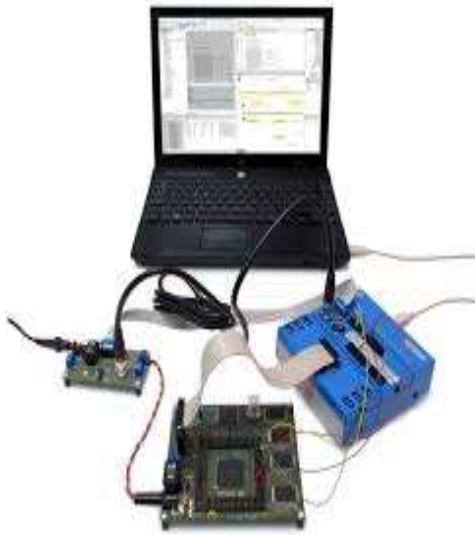
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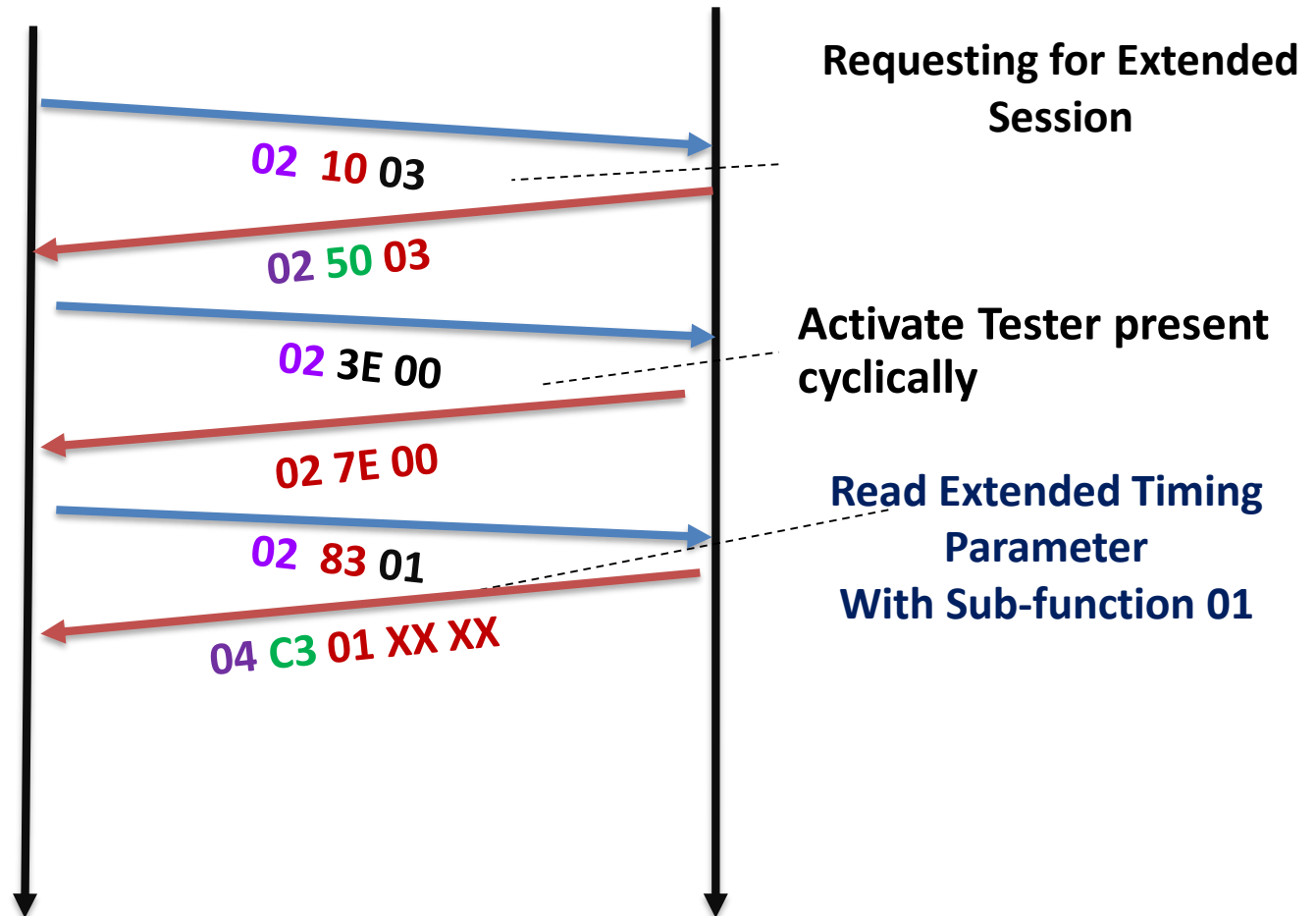
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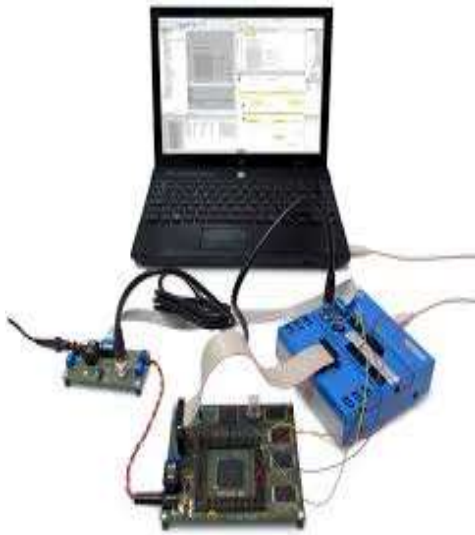
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**Positive Response frame format 0x83**

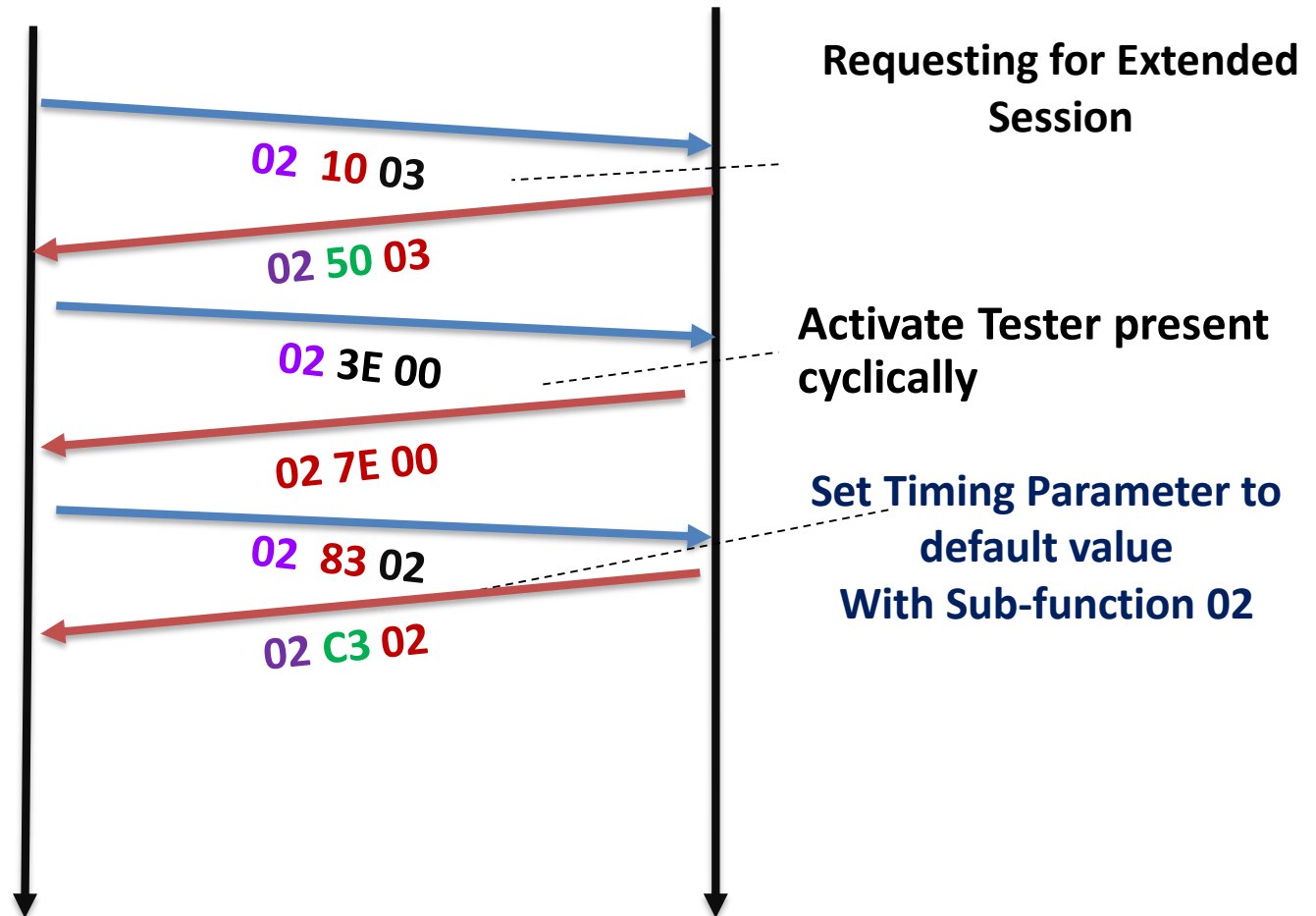


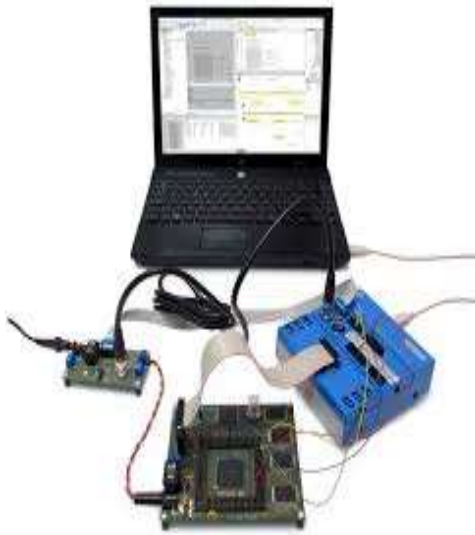
## Request & Response (Positive Response)



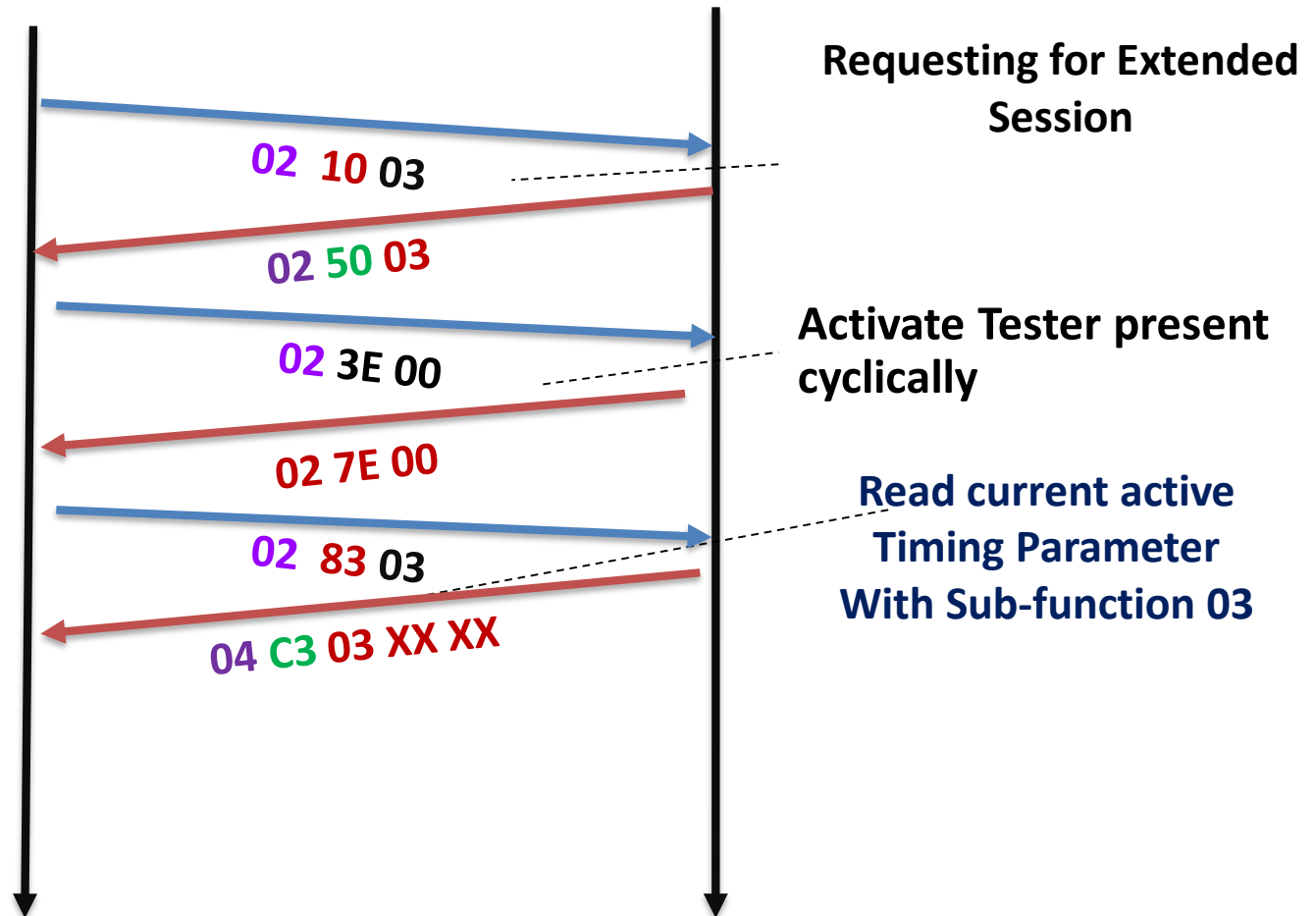


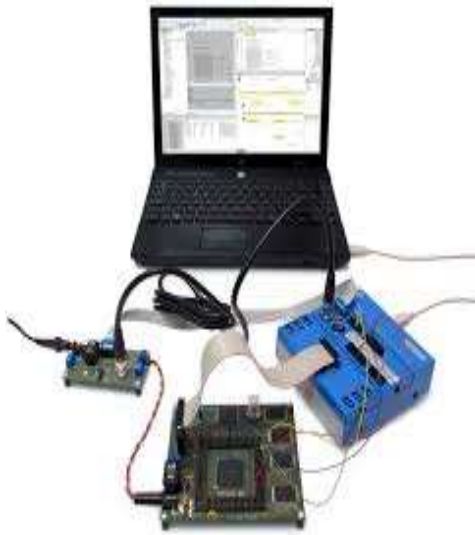
## Request & Response (Positive Response)



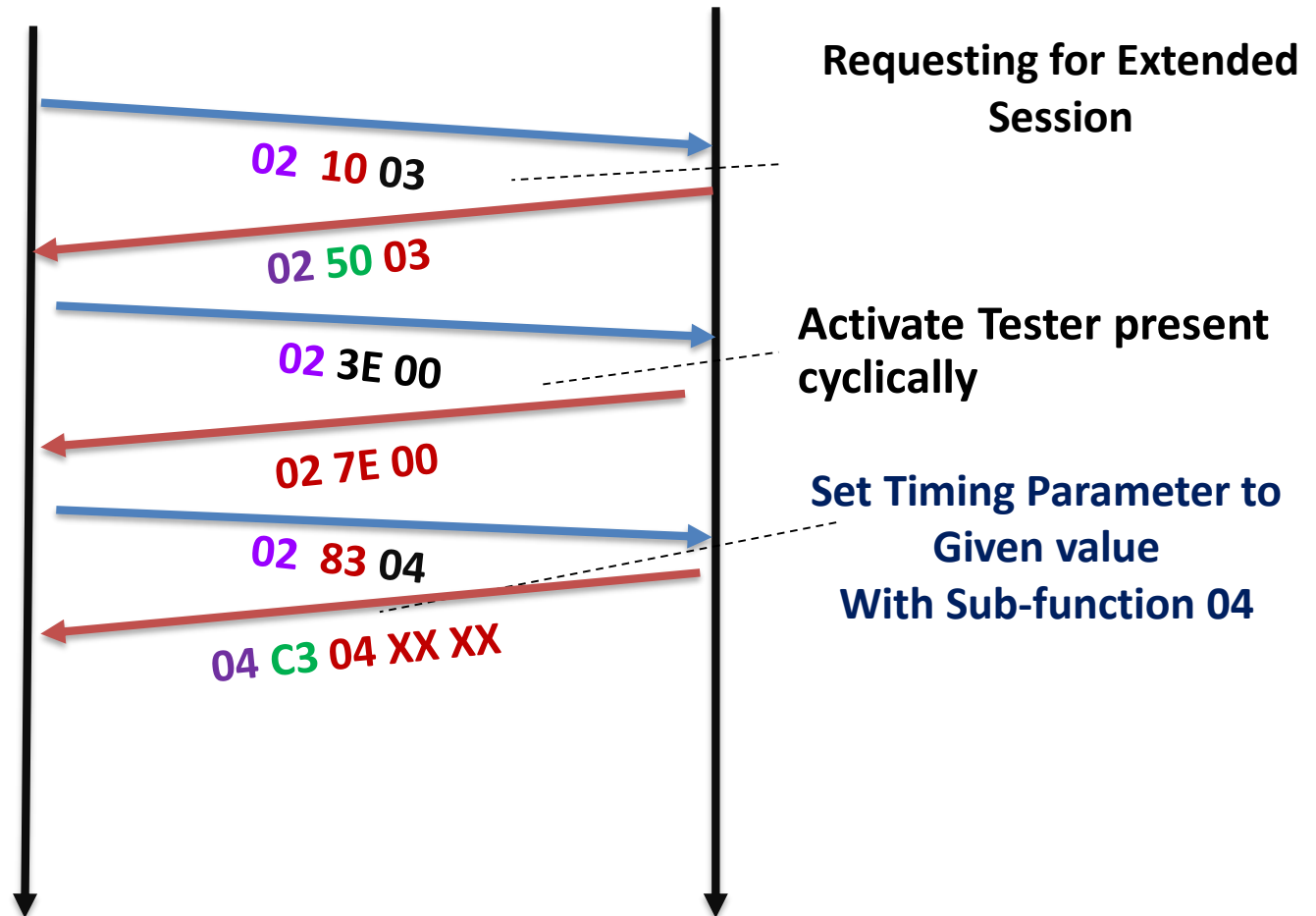


## Request & Response (Positive Response)

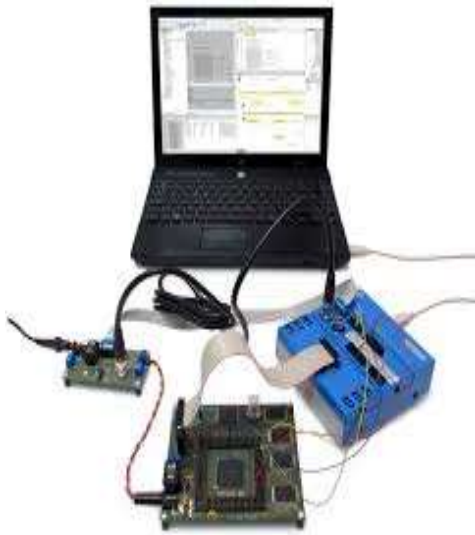




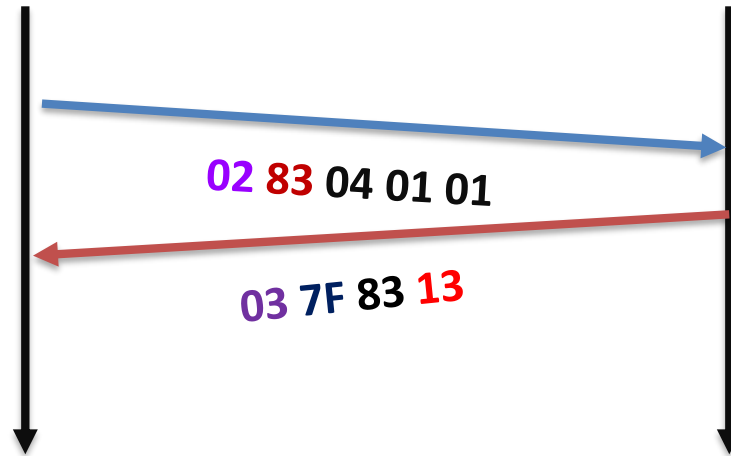
## Request & Response (Positive Response)



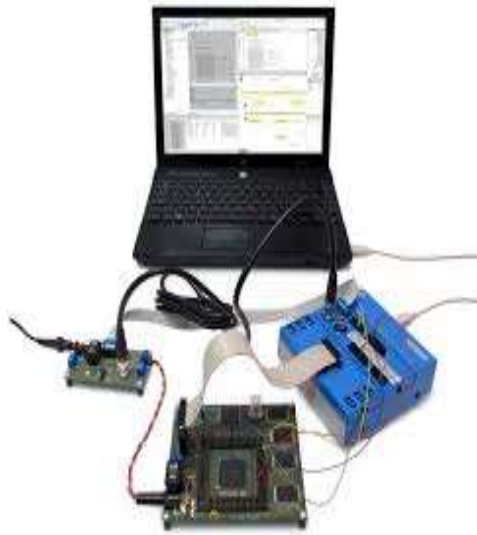
**Negative Response frame format 0x83**



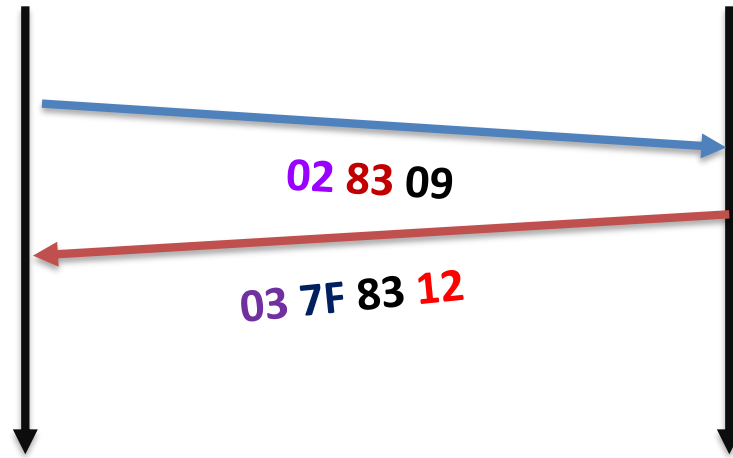
**Incorrect Length**

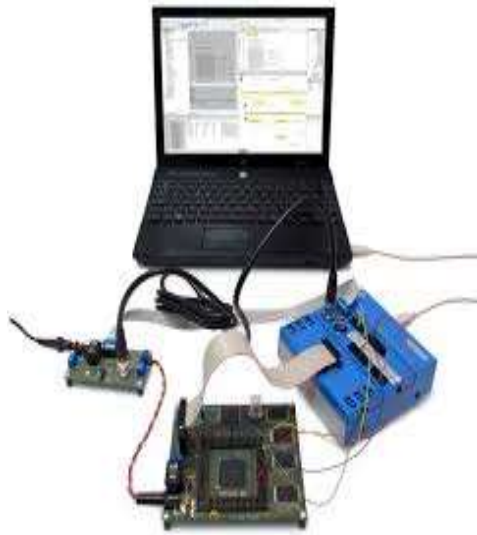




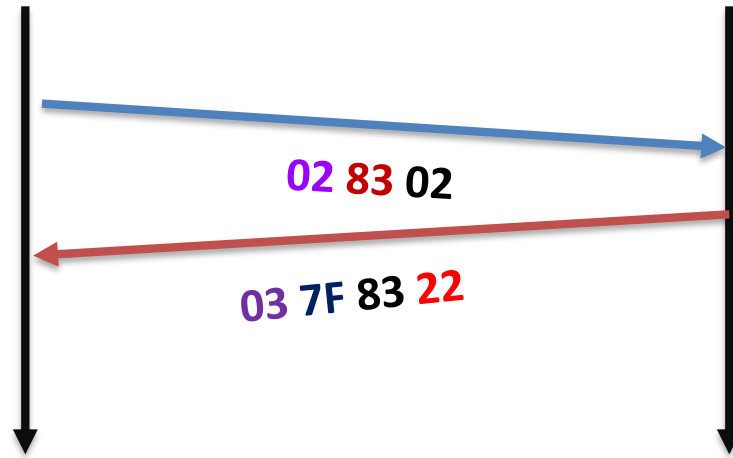


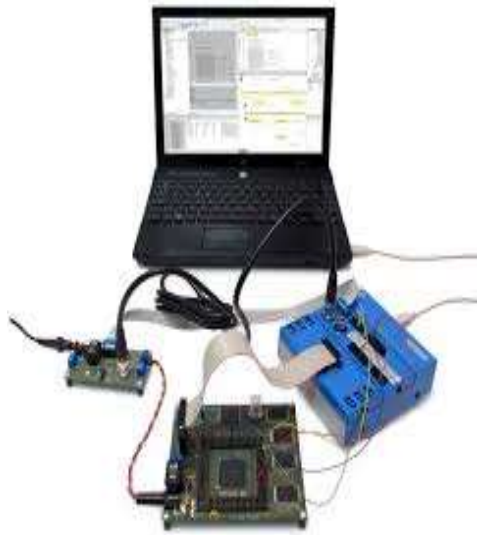
**Sub-Function Not Supported**



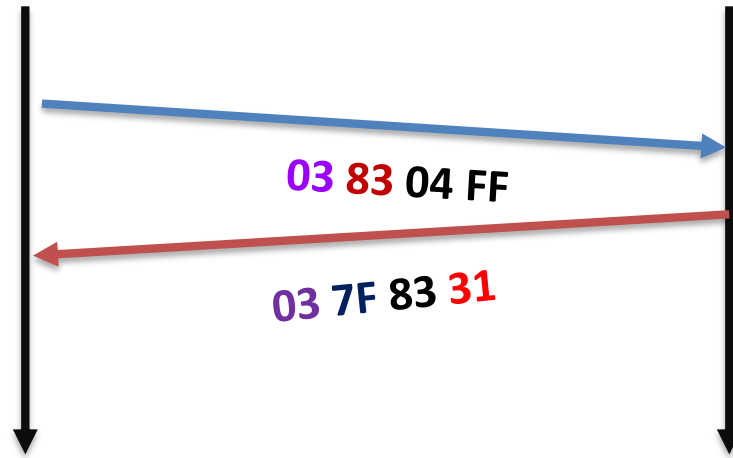


Conditions not correct





**Request out of Range**



## Supported NRC for 0x2F

### **13 - Incorrect Message Length Or Invalid Format in PCI length**

**Declaration :** If we requested a wrong/invalid then the it will give this negative response.

**22 - Conditions Not Correct :** If the criteria for the request Security Access are not met.

**31 - Request out of range :** If user request Invalid DID

**33 - Security Access Denied :** If user requests without unlocking the ECU

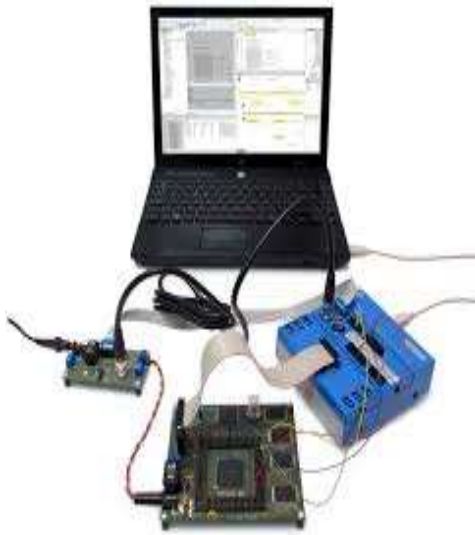
**35 - Invalid Key :** If the key value not match with stored value in server then tester will get NRC.

**36 - Exceed number of Attempts :** If the number of attempts exceeds maximum invalid attempts

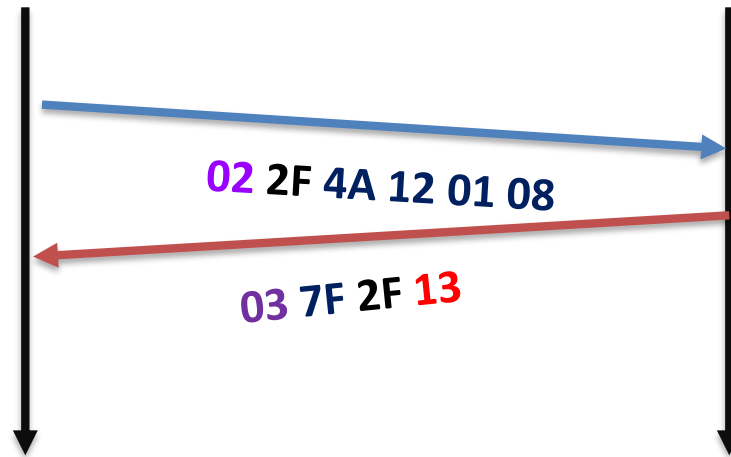
**37 – Required Time Delay not Expired :** If the delay timer is active and request is sent

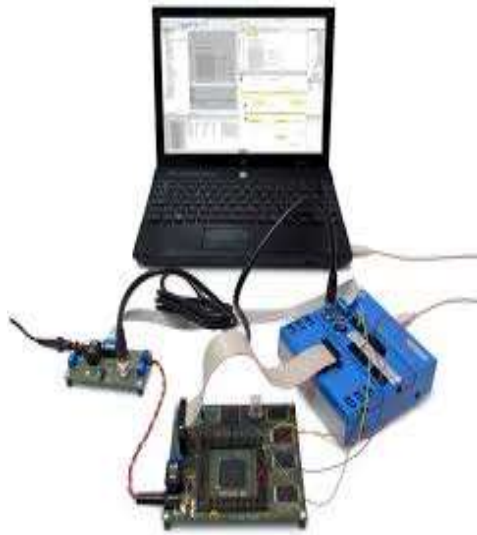
## **NRC Flow for Service 0x2F**

**0x13 → 0x31 → 0x33 → 0x22 → 0xFF**

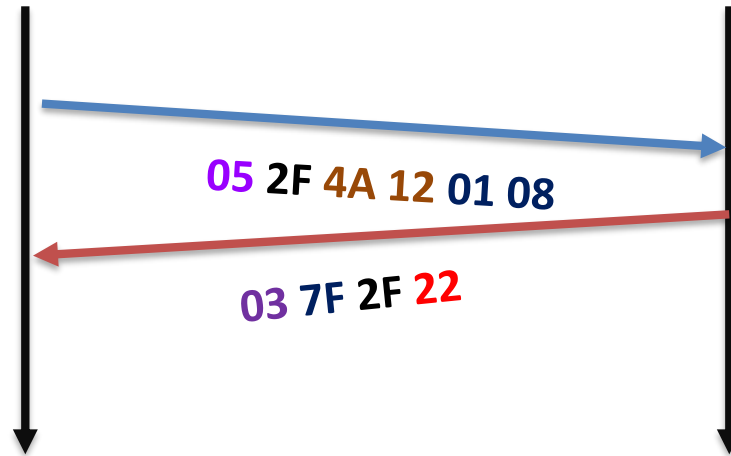


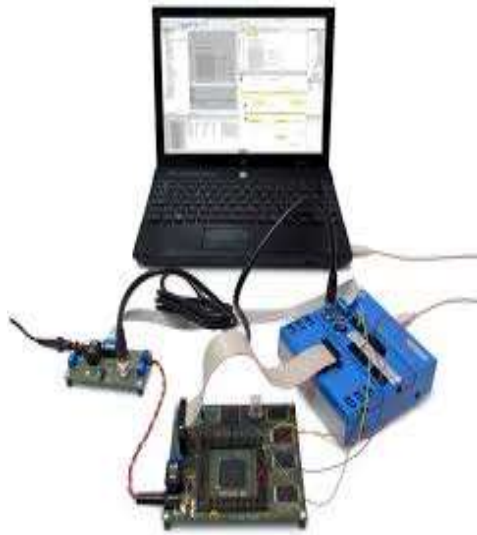
**Incorrect Length**



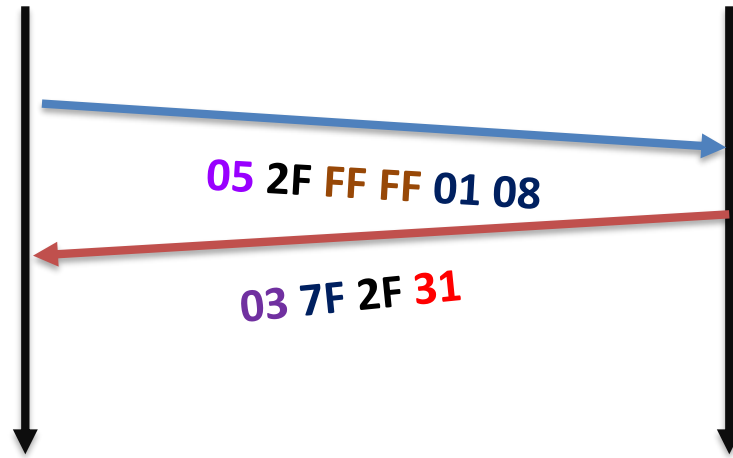


**Conditions Not Correct**

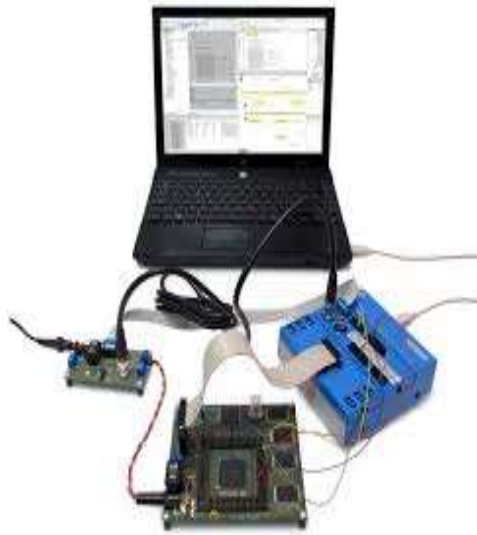




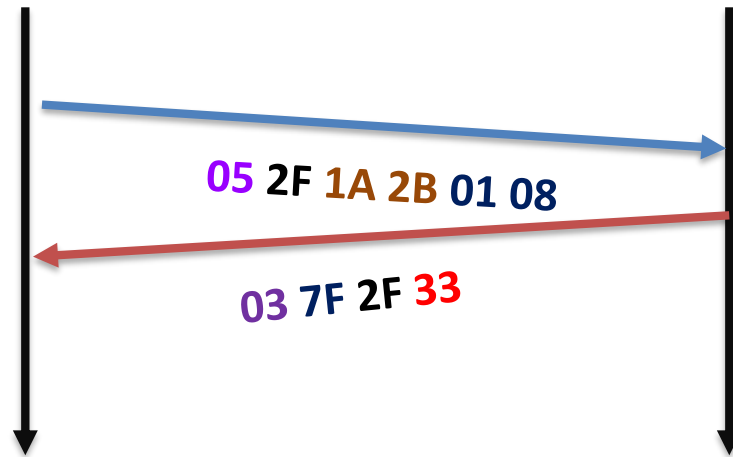
**Request out of Range**

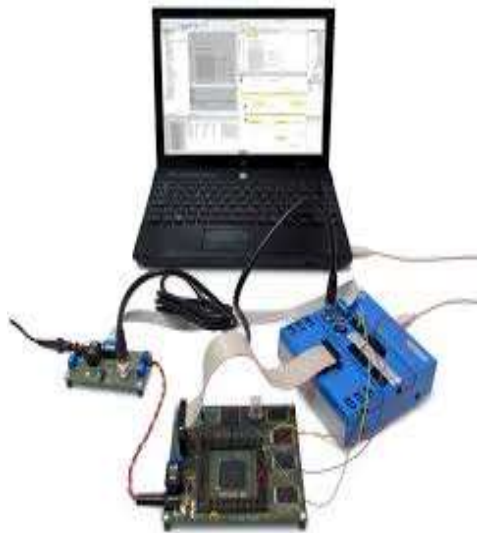






**Security Access Denied**



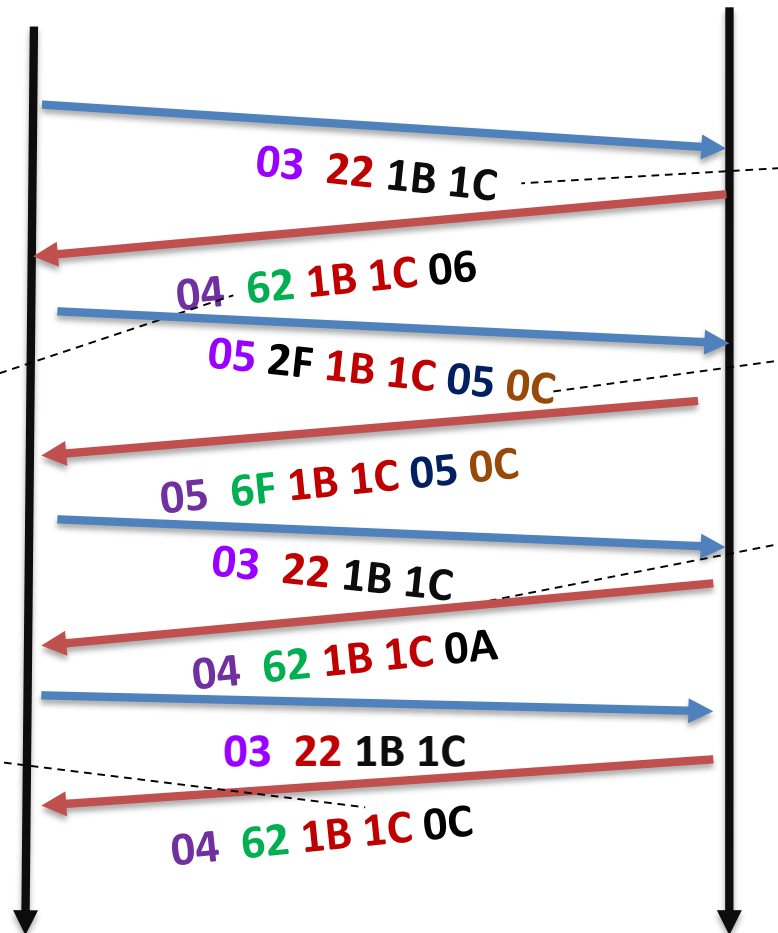


# Request & Response (Positive Response)



Positive Response : **62**  
Throttle Position  
With data as 6%

Reading current  
throttle position data  
after 5 secs of requested  
I/O



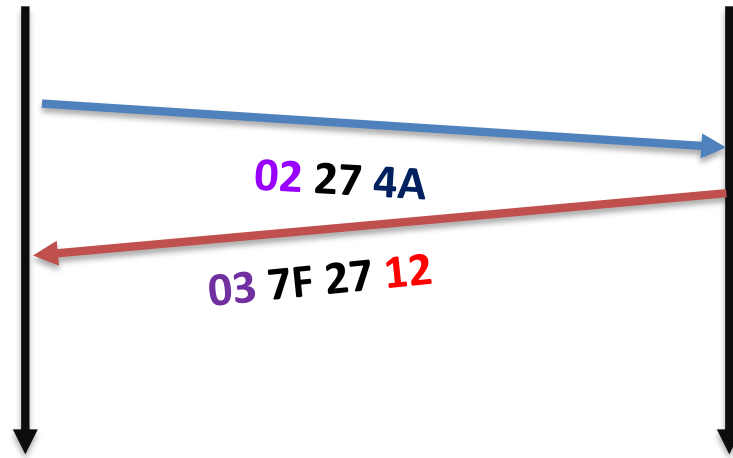
Reading current  
throttle position data

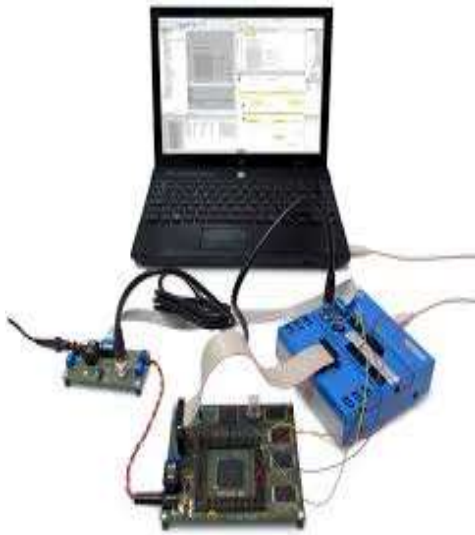
05 - Short term  
adjustment  
**0C - Control State**

Reading current  
throttle position data  
Immediately after  
requested I/O

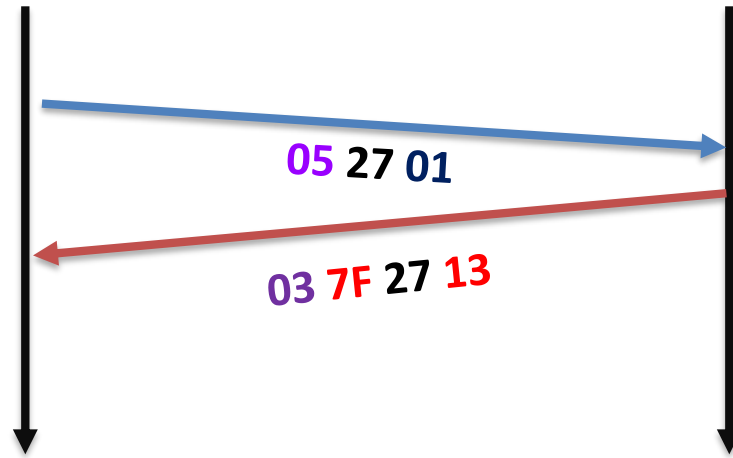


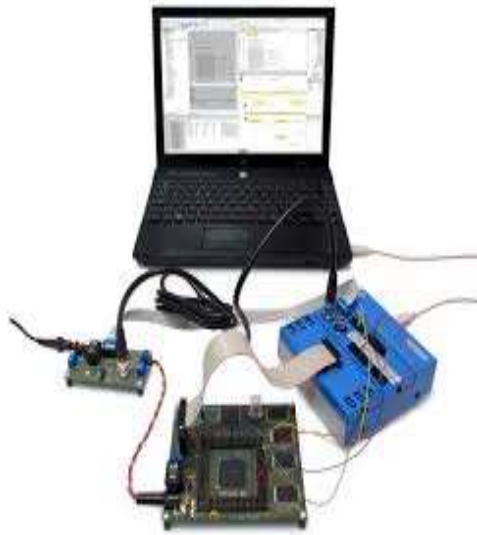
**Sub-Function not Supported**



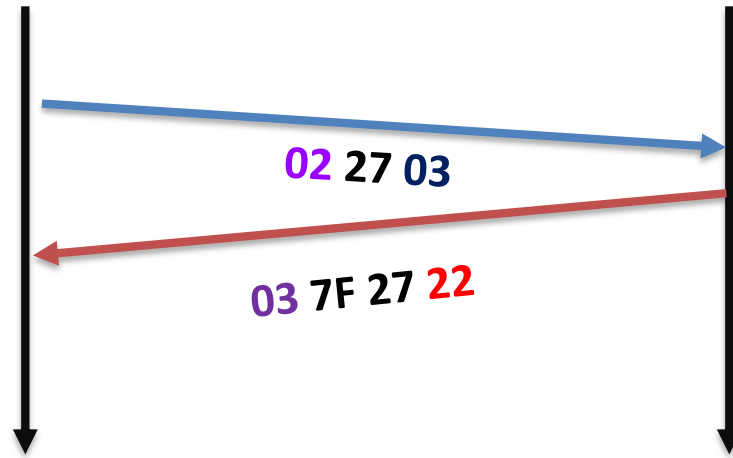


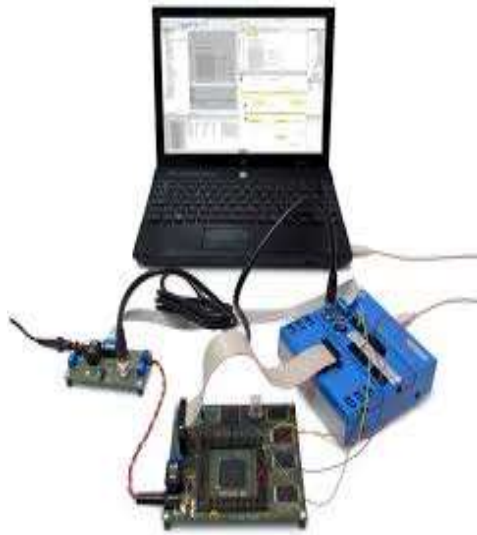
**Incorrect Length**



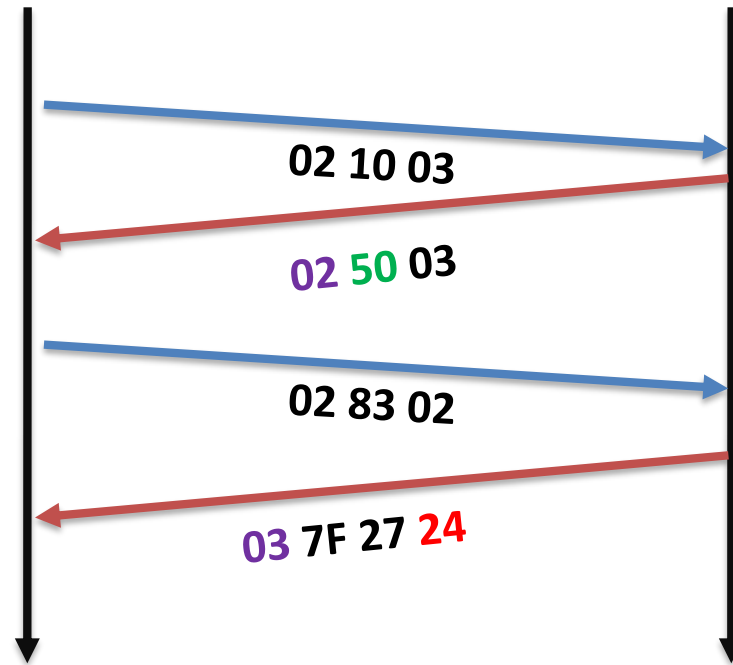


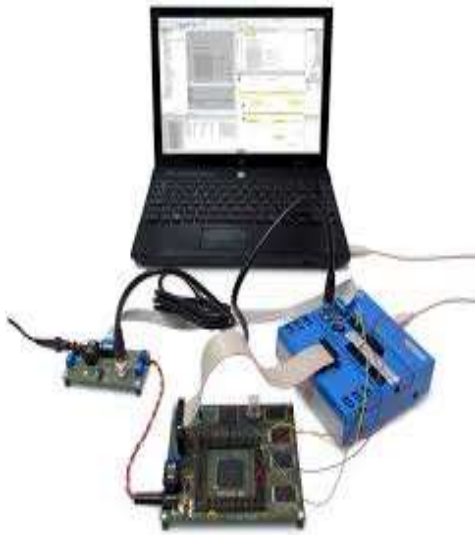
Condition not correct



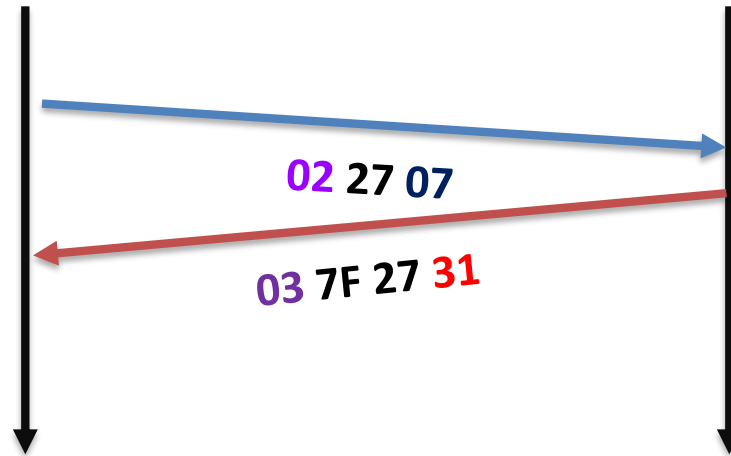


## Request Sequence Error





**Request Out of Range**



**End of the Tutorial !!**