GlueLogix Encode In Motion
Detailed Example

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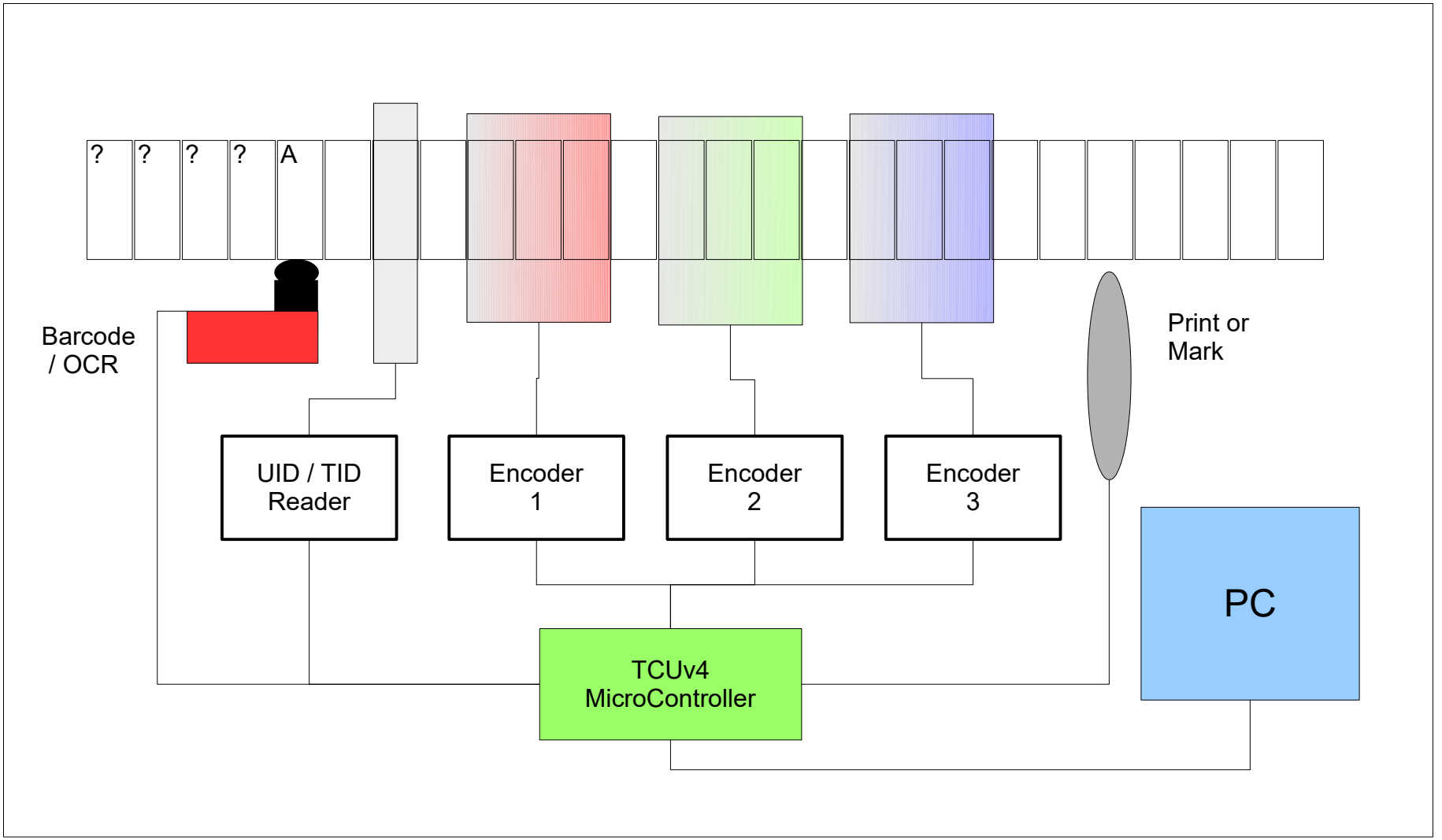
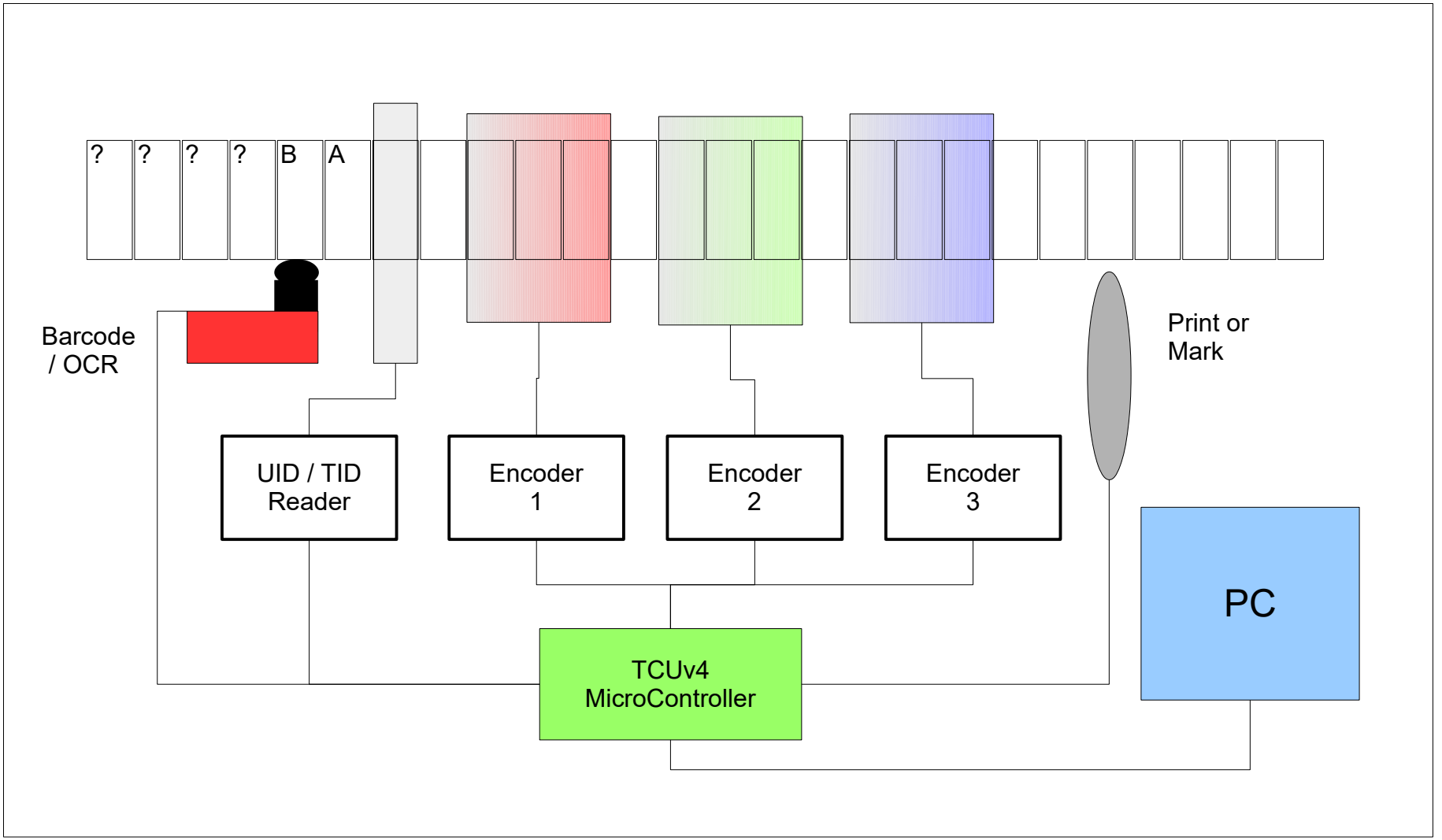
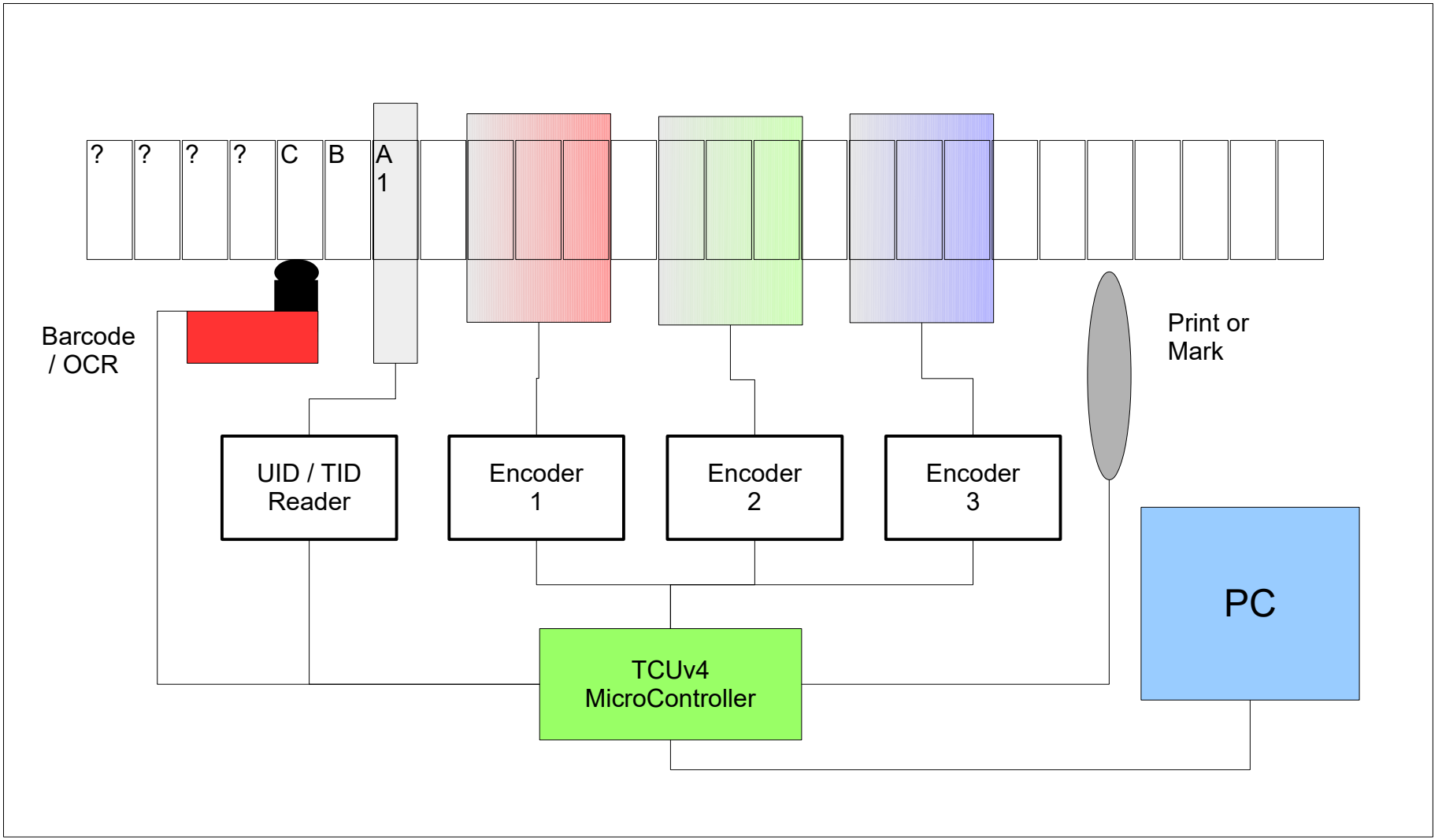
This document presents implementation details of the GlueLogix Encode In Motion system, which is protected by US Patent 8,896,425, "Apparatus and method for serialized continuous encoding of RFID tags." All implementations of this design must be licensed by GlueLogix Inc.



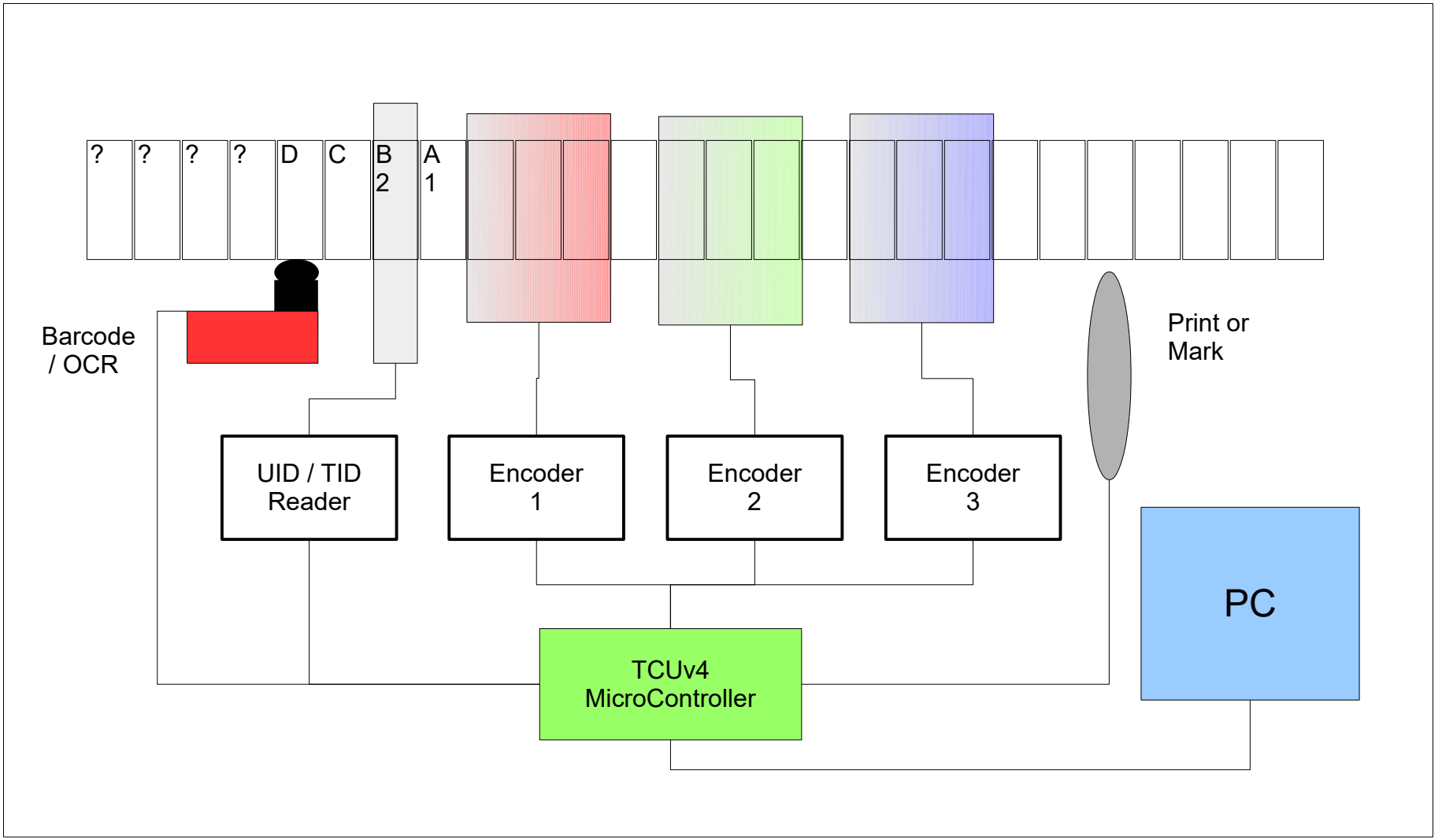
T0: Barcode/OCR Camera reads code A from the label or card in its focus. Assume this is the start of a run, so everything to the right of label A is unknown.



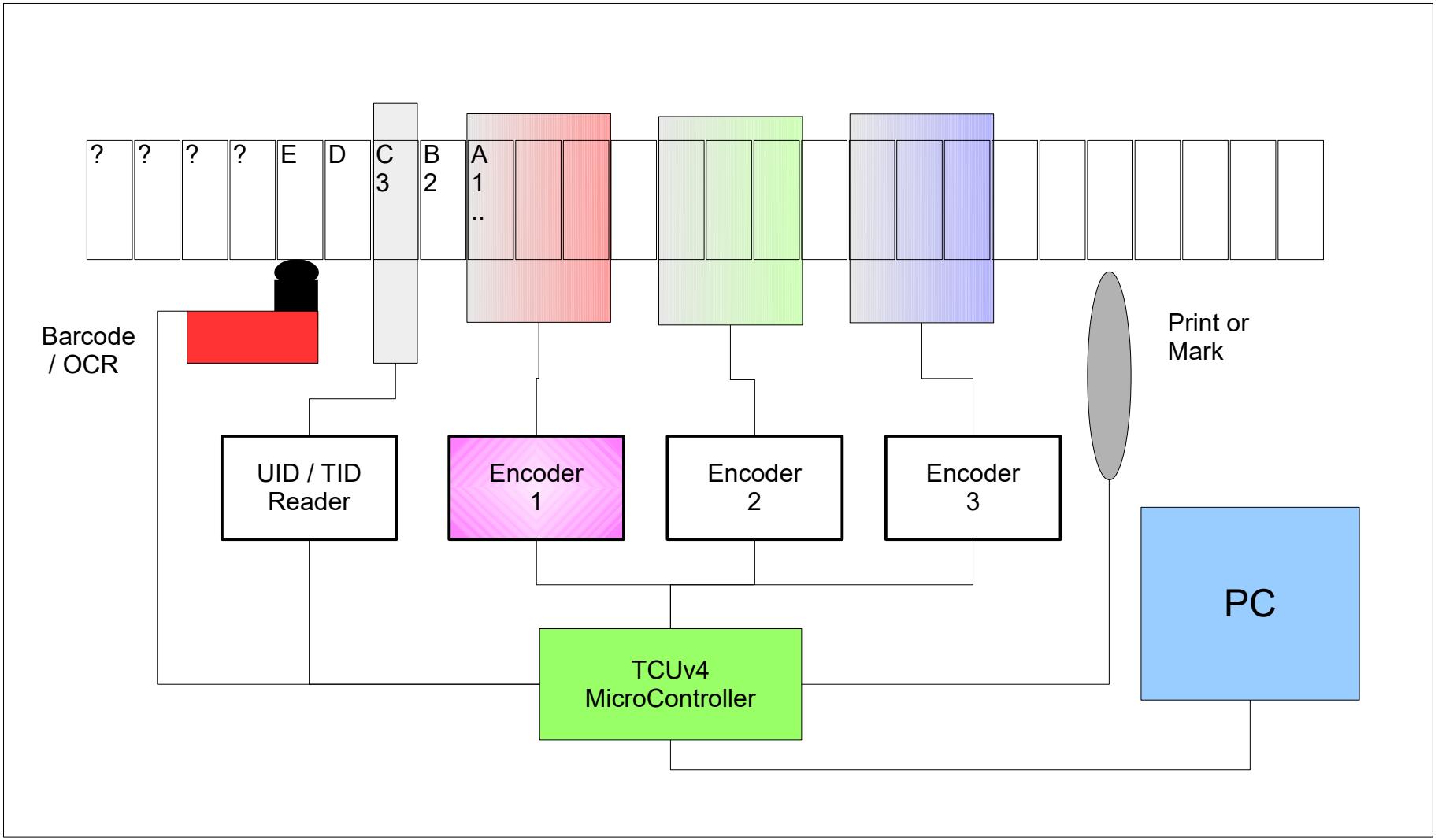
T1: Label A has progressed upstream while code B is read by the camera.



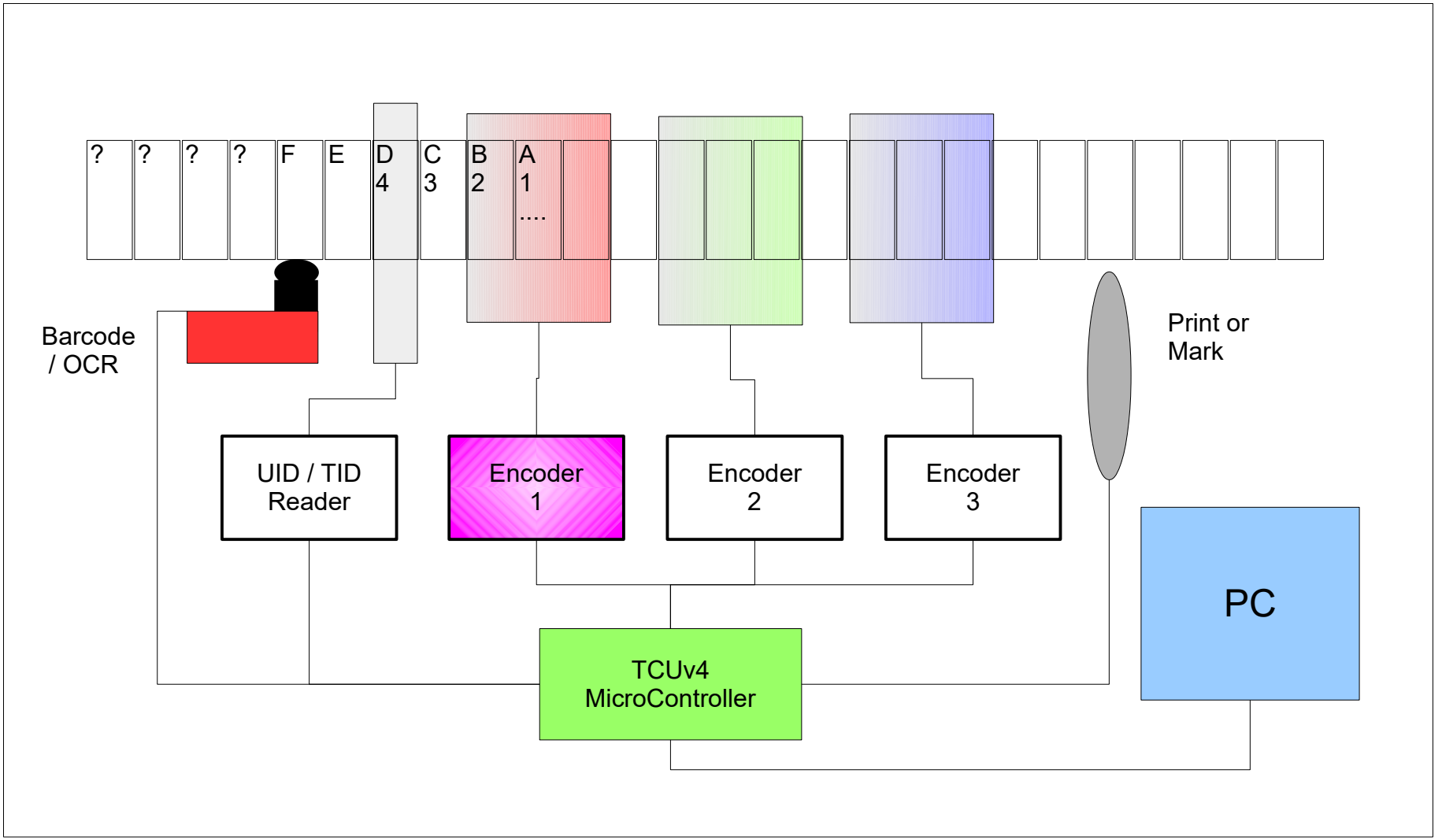
T2: Label A reaches the Unique ID / TID reader. This reader has a short antenna along the path of travel, so it will read one and only one chip ID. That ID is represented as 1 here. TCUv4 associates UID 1 with code A.



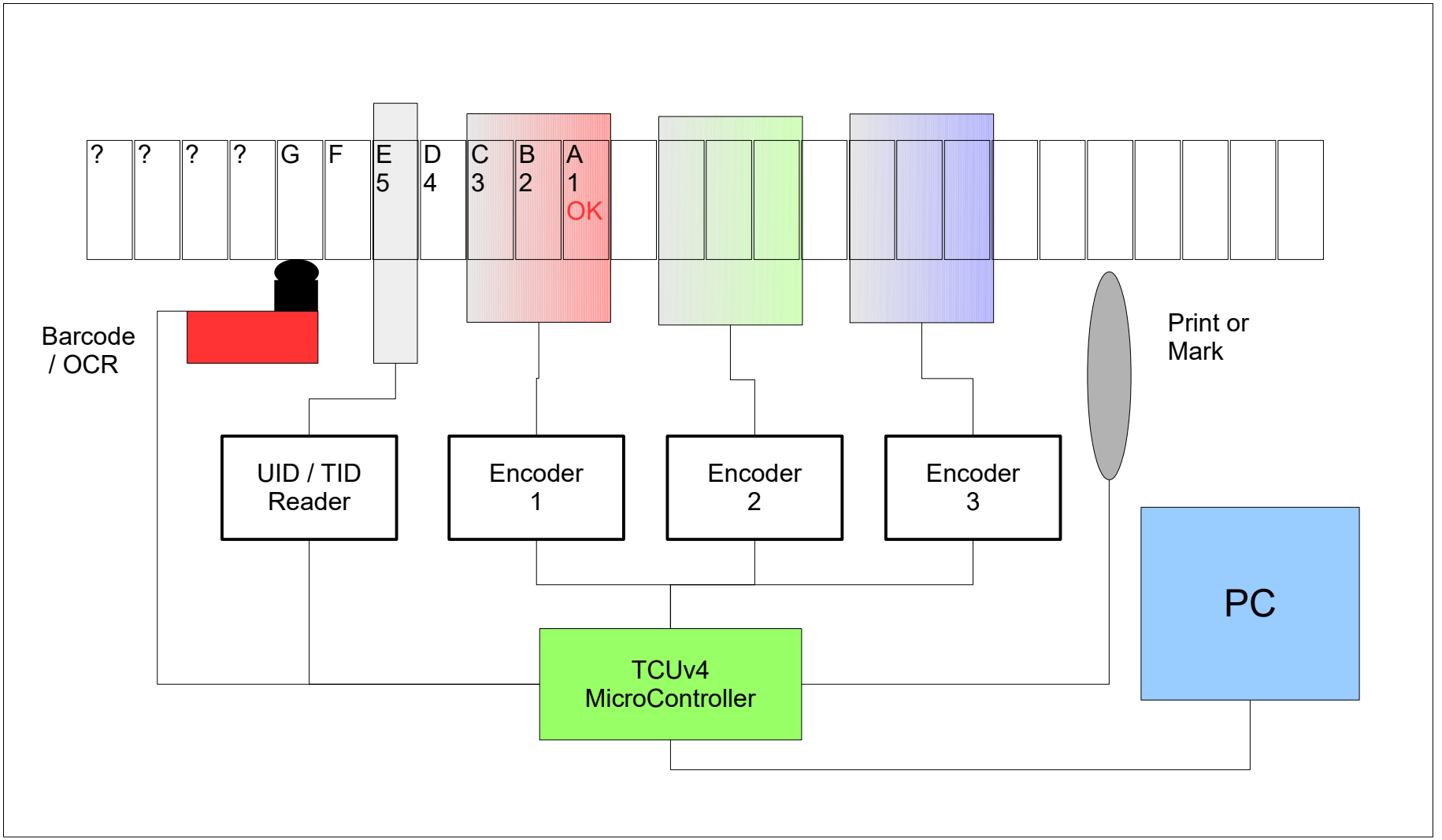
T3: Code D is read. UID 2 is read and associated with code B in the TCU. The encode data for label A with UID 1 is computed and queued for Encoder 1, in the cycle before label A enters the zone of Encoder 1.



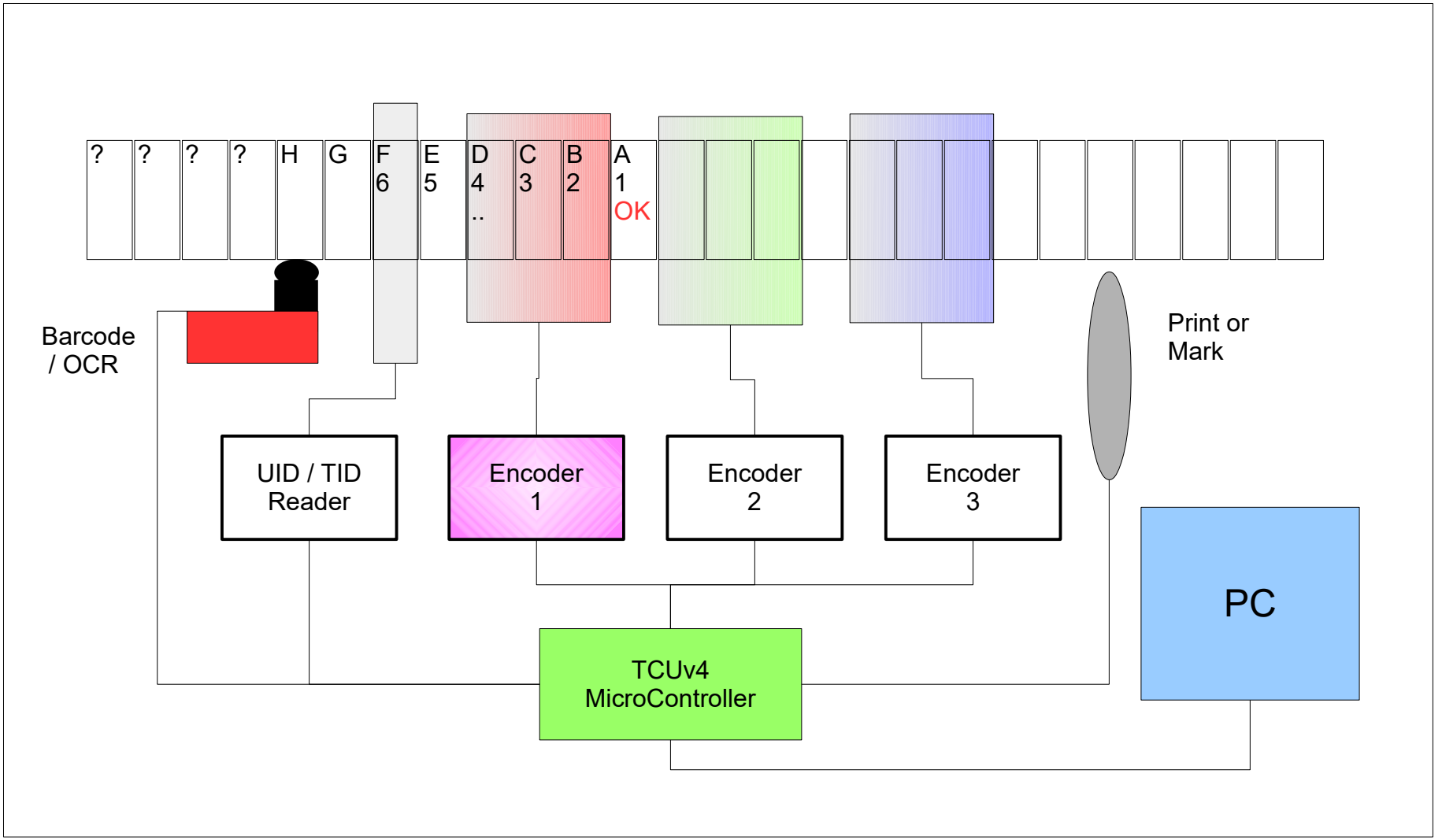
T4: Encoder 1 is enabled in time for Label A to enter its antenna zone. The Encode antennas are long along the path of travel so the scheduled chip can be engaged for multiple label cycles. In this configuration, each chip is encoded in at most 3 UID/TID read cycles. Encoder 1 is highlighted to show that it is now active.



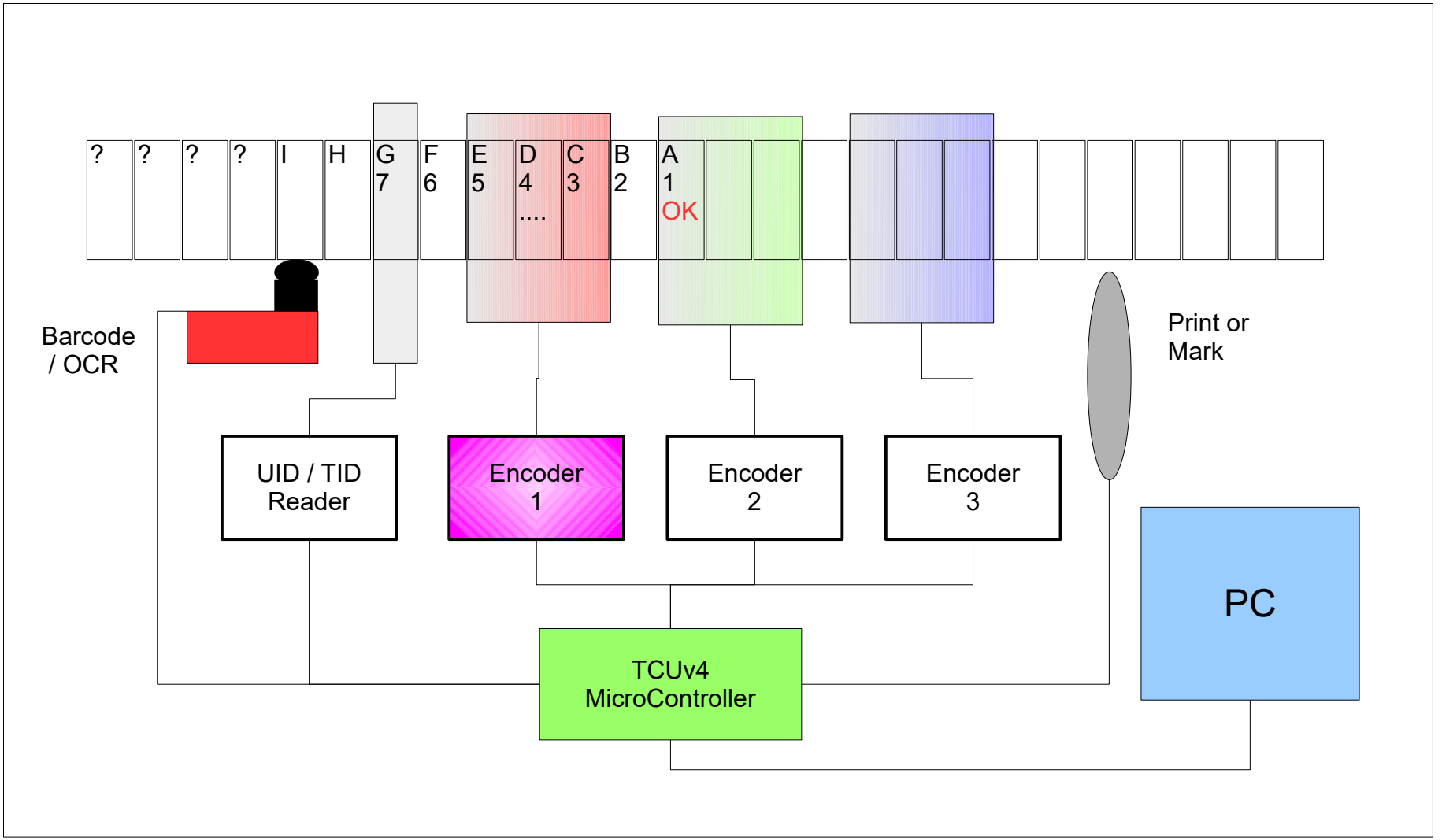
T5: Code F is read by the Camera. UID 4 is read and associated with label D. Label B enters the antenna zone of Encoder 1 and is ignored because Encoder 1 is addressing label A by its UID or TID.



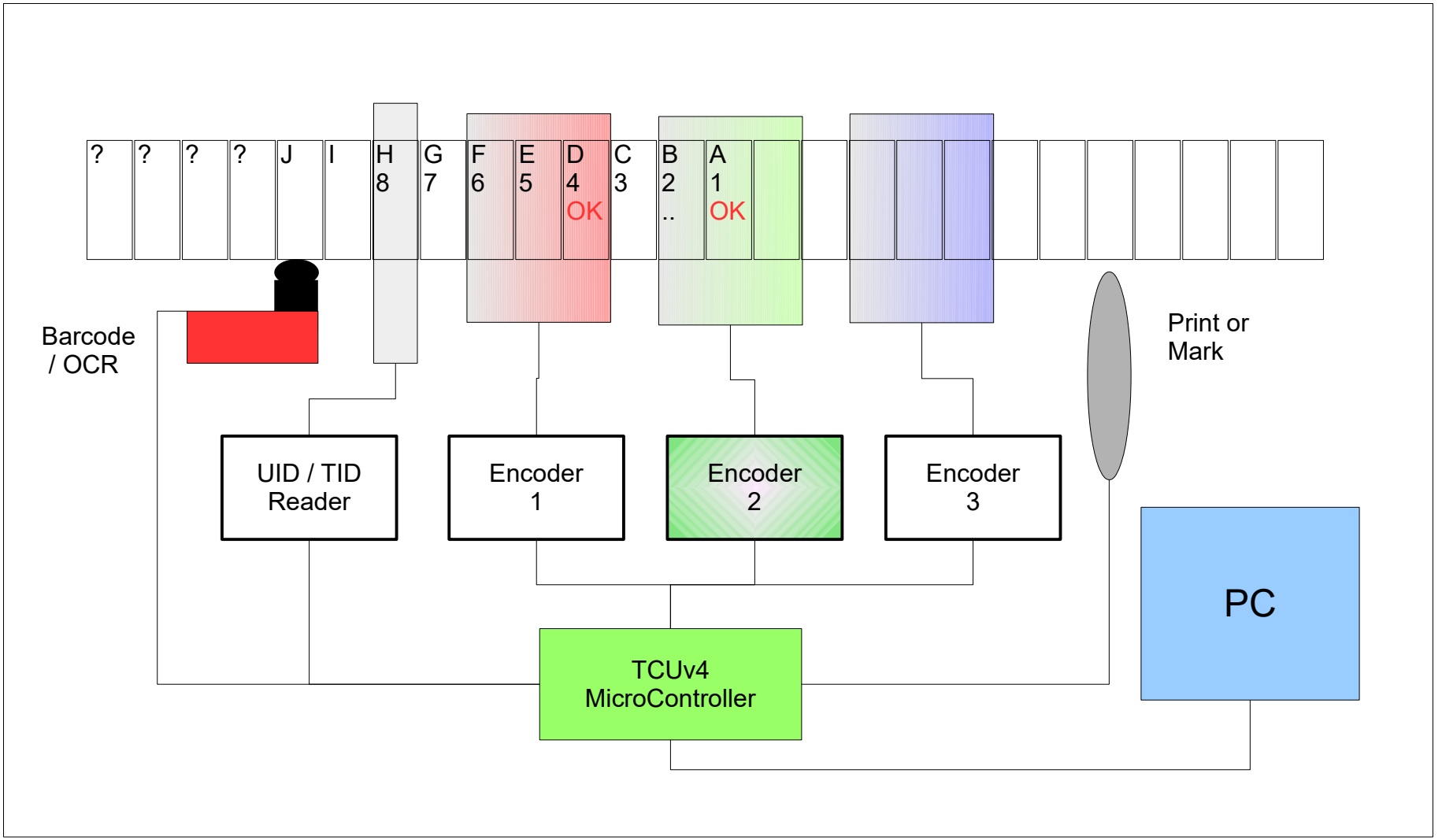
T6: Label A is OK, so Encoder 1 turns off. Label C and B are both in Encoder 1's antenna zone but are still ignored. Camera reads code G and UID 5 is associated with code E. Label D is about to enter Encode 1's zone, so its encode data is computed and queued for Encoder 1.



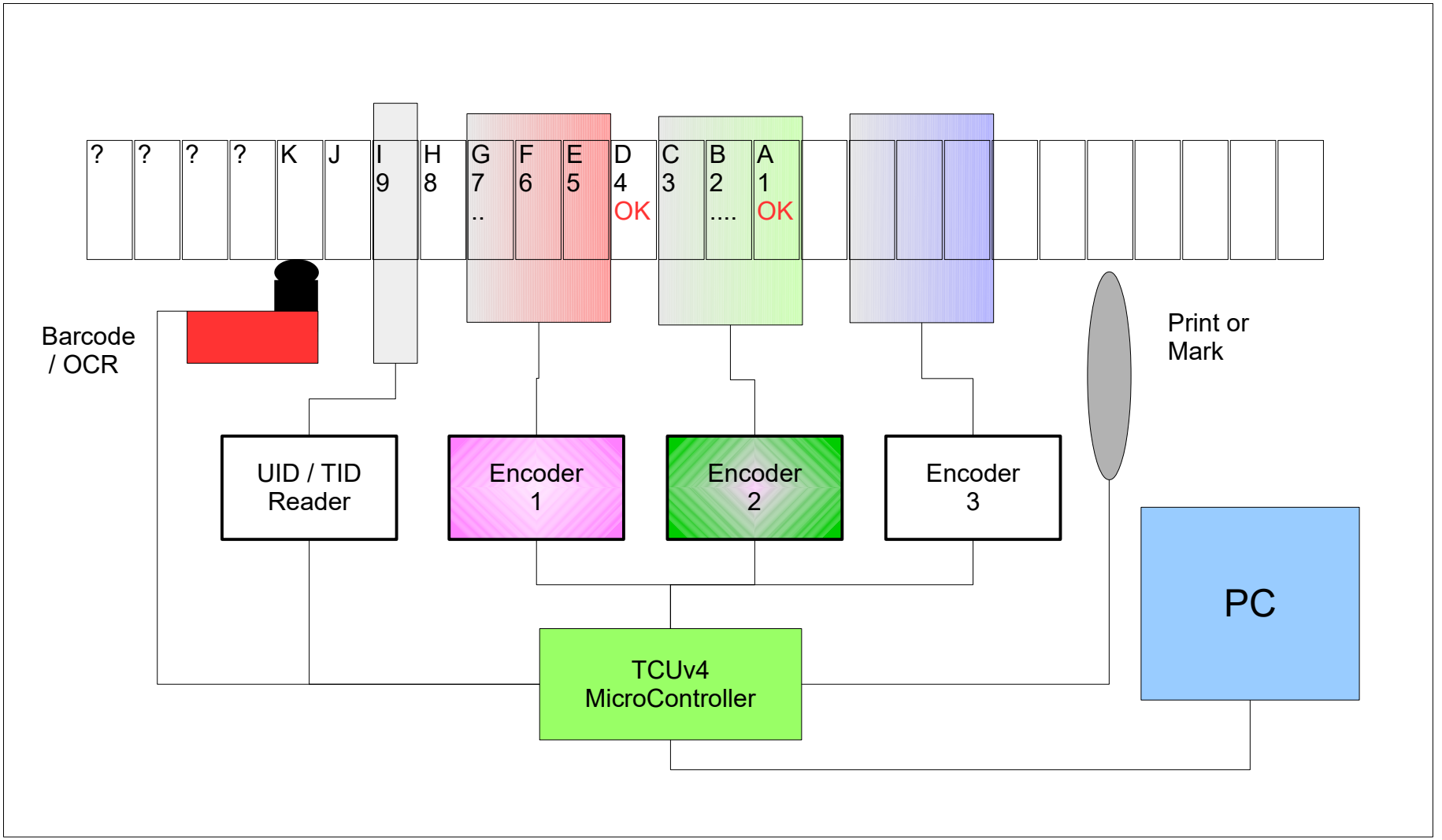
T7: Encoder 1 turns back on for label D.



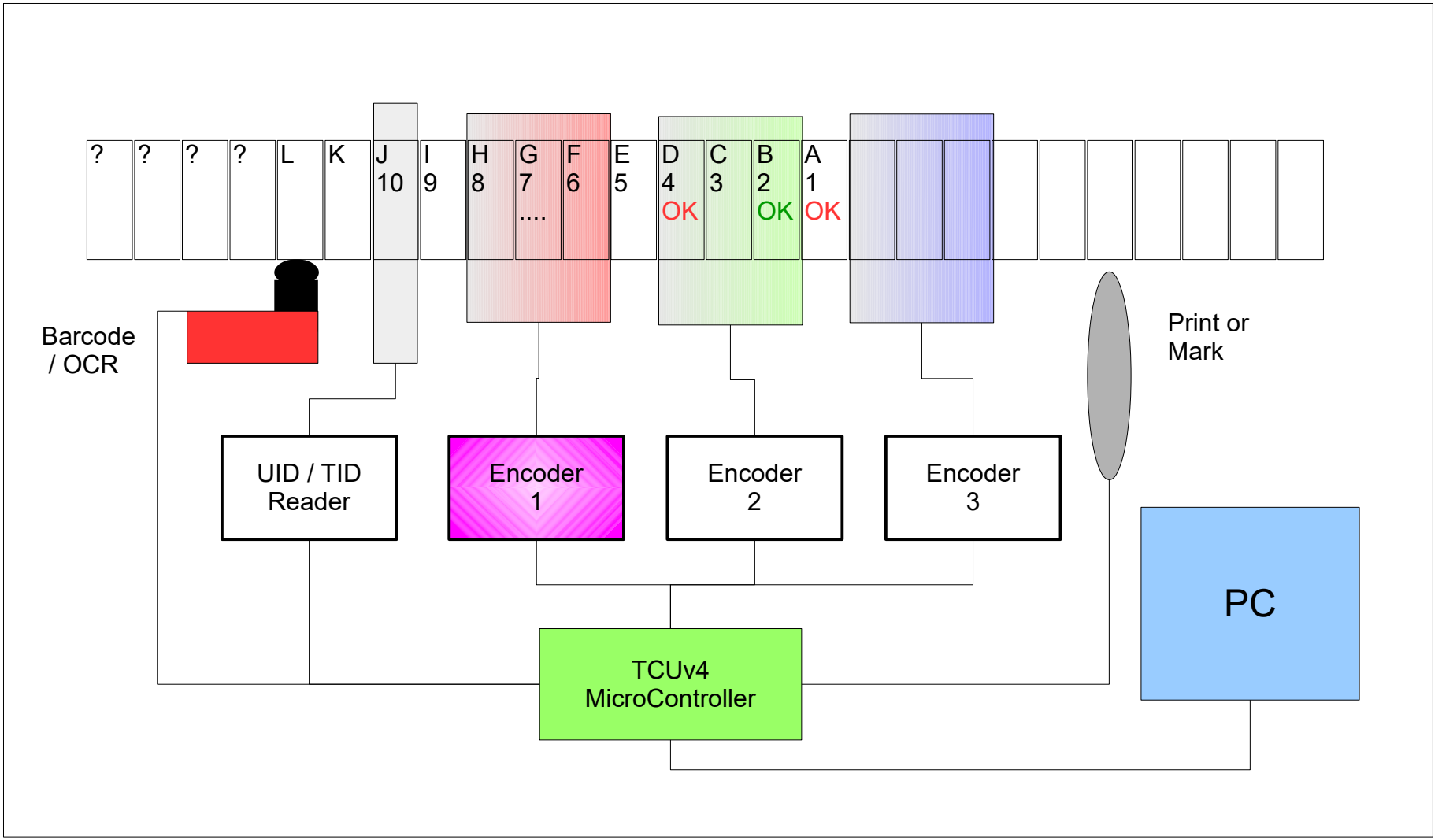
T8: Label D continues to encode. Label B is about to reach Encoder 2, so its data is computed and queued.



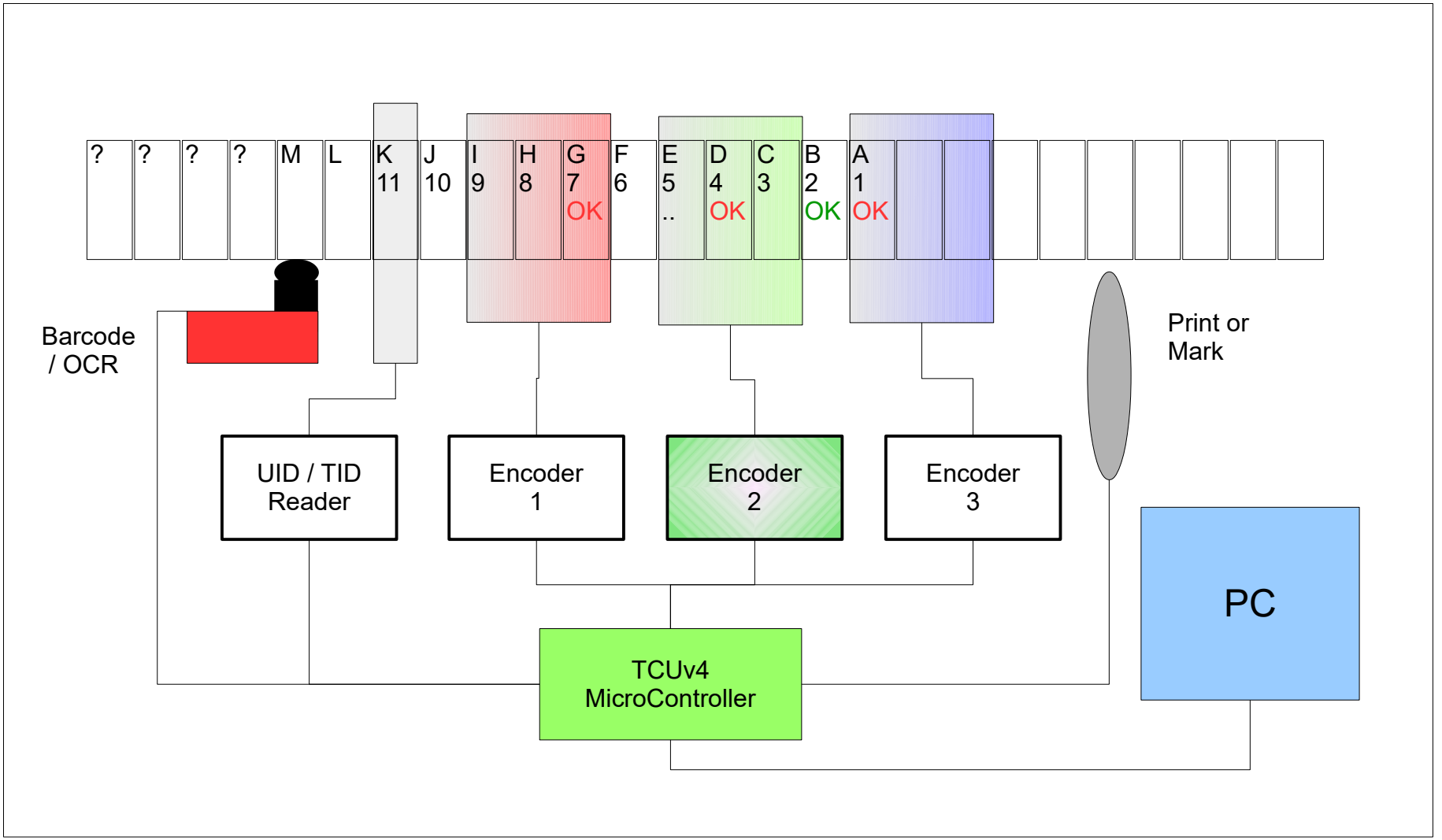
T9: Label D is OK so Encoder 1 turns off. Label B reaches its allocated antenna, so Encoder 2 turns on.



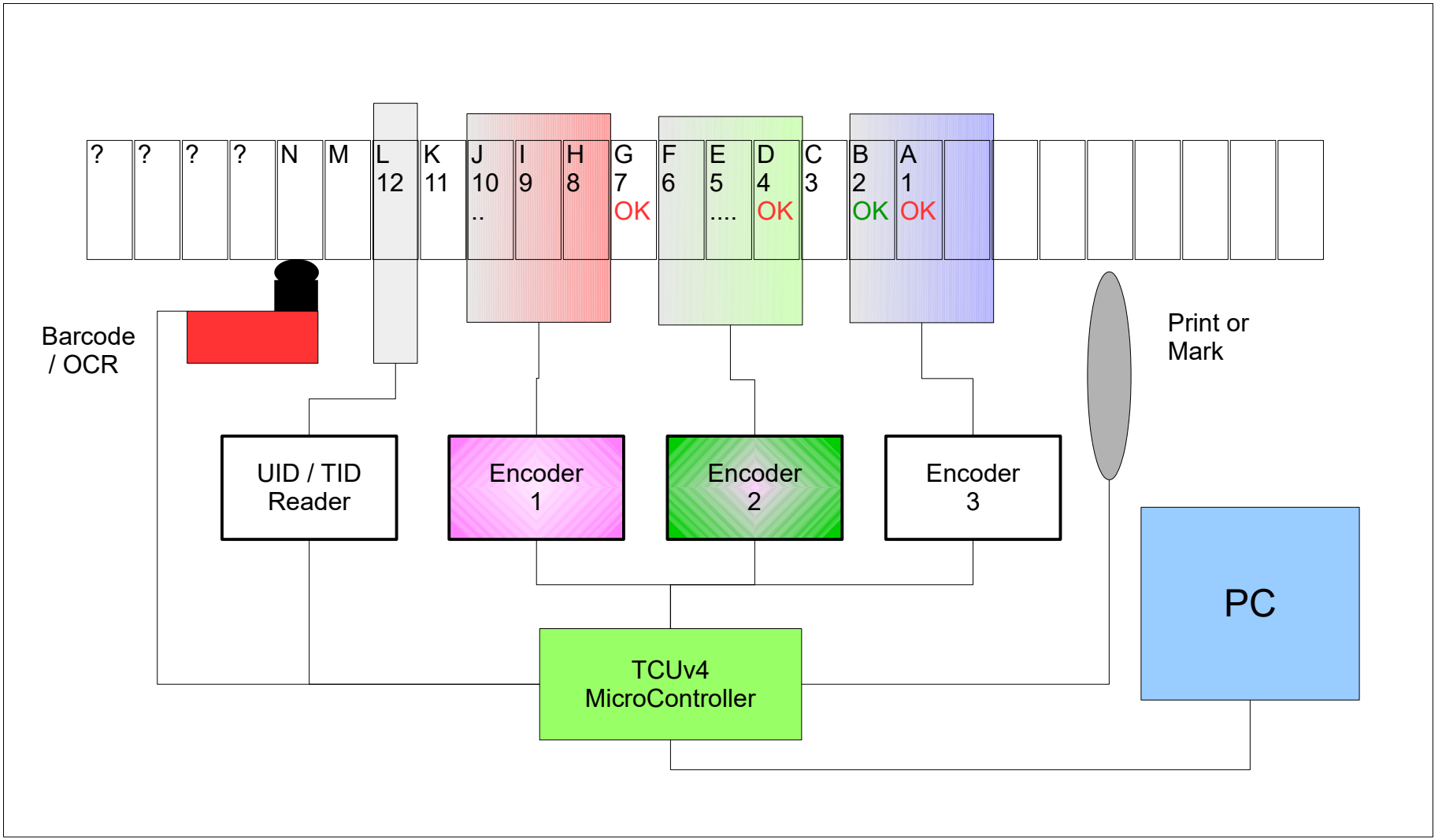
T10: Label B continues to encode. Code K is read. UID 9 is read and associated with label I. Encoder 1 turns on for label G.



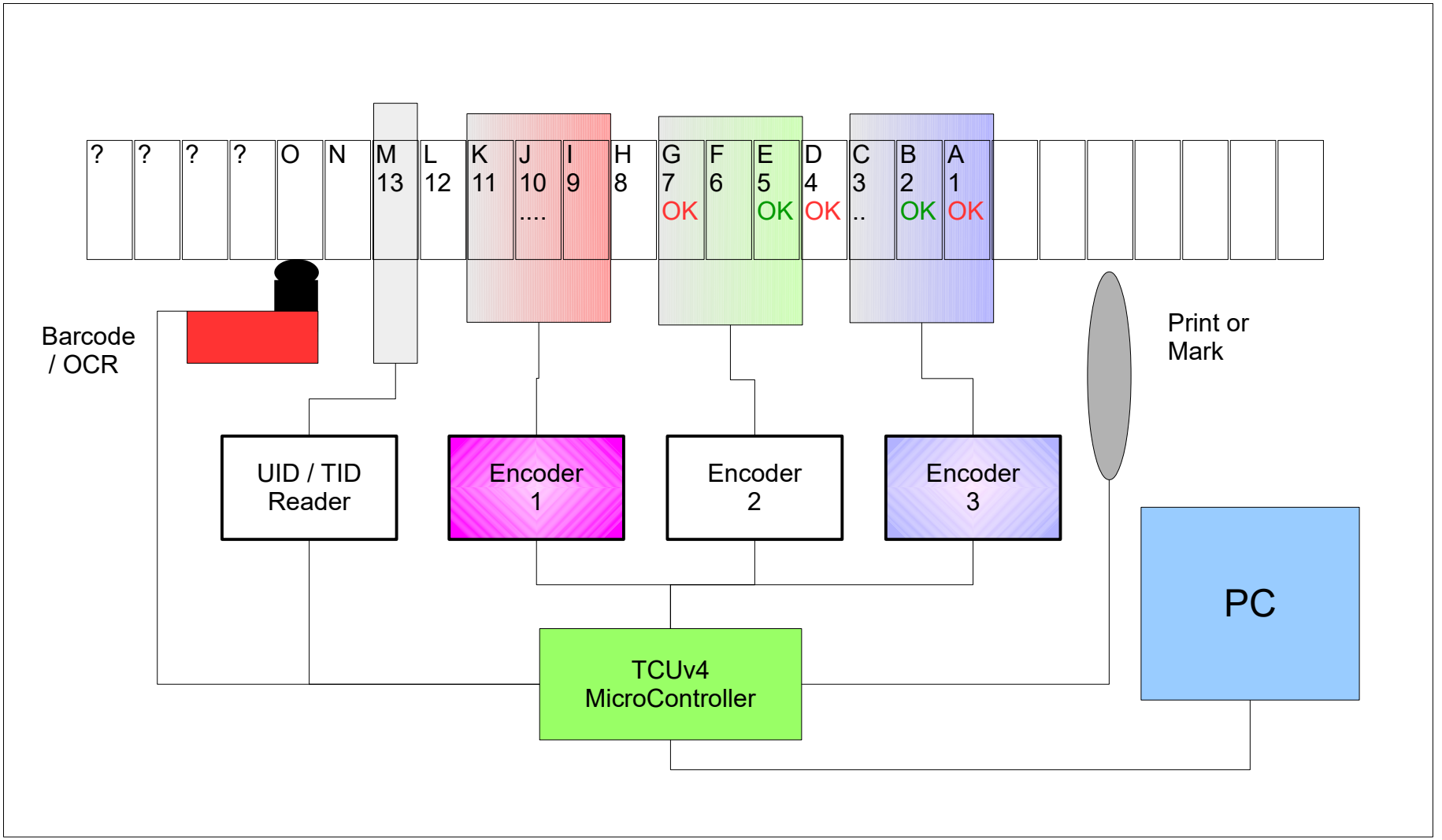
T11: Label G continues to encode, while label B completes OK on Encoder 2. Notice that the OK notations in the figure match the color of the encoding antenna. Encoder 2 turns off.



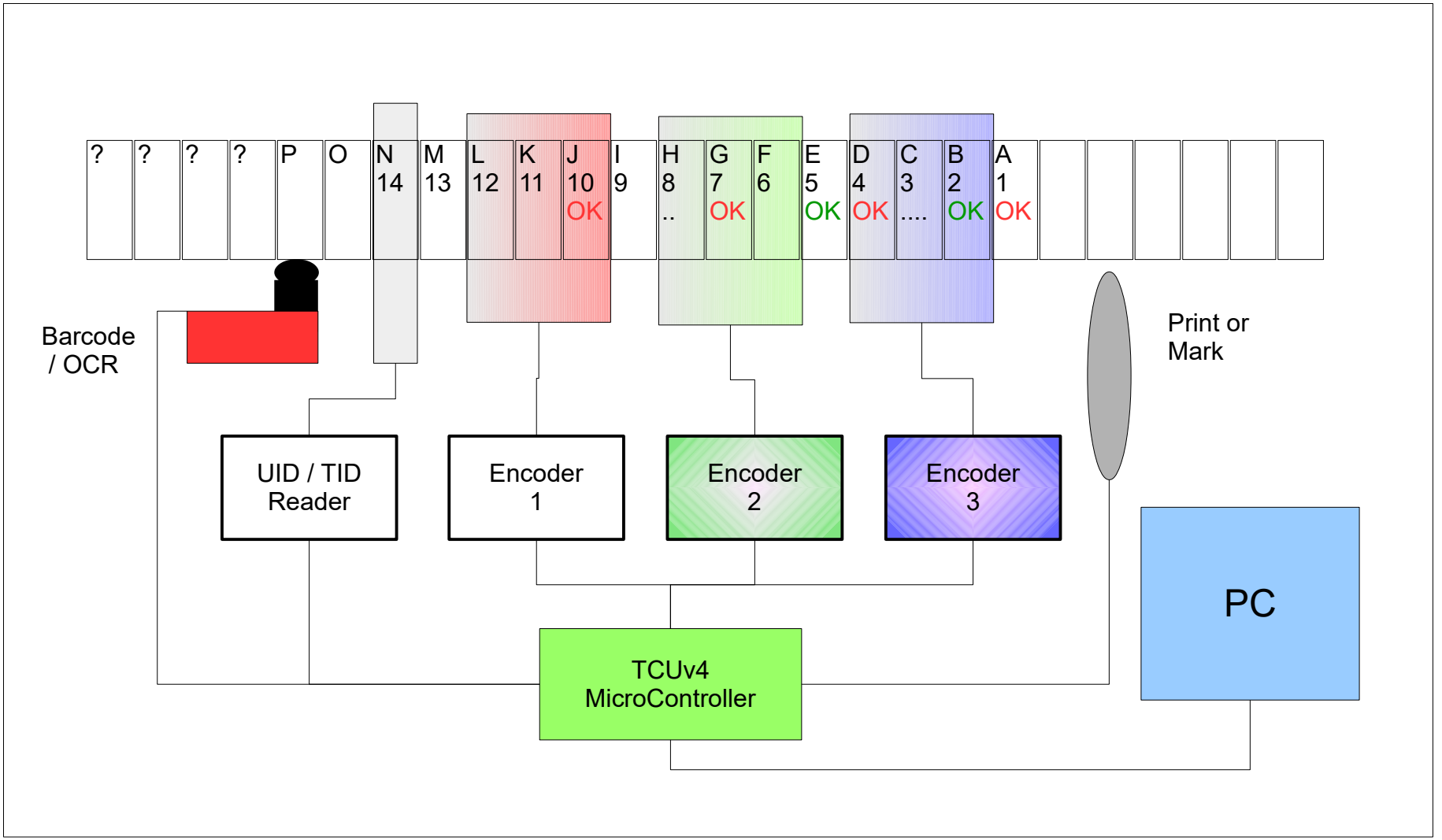
T12: Label G completes OK on Encoder 1, which turns off. Label E starts on Encoder 2, which turns on.



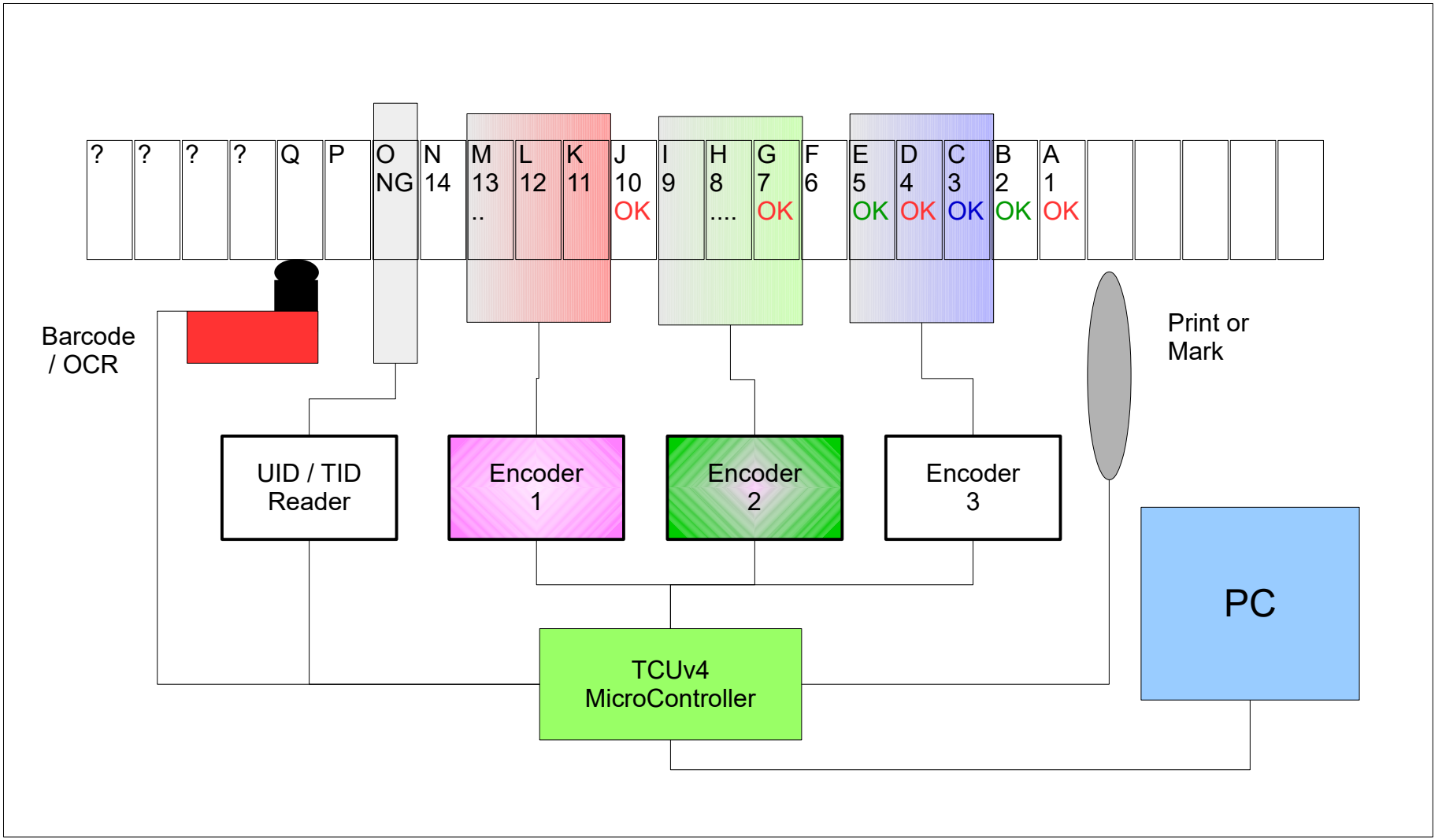
T13: Encoder 1 turns on for label J. Label E continues encoding on 2. Label C is about to reach Encoder 3, so its data is computed and queued.



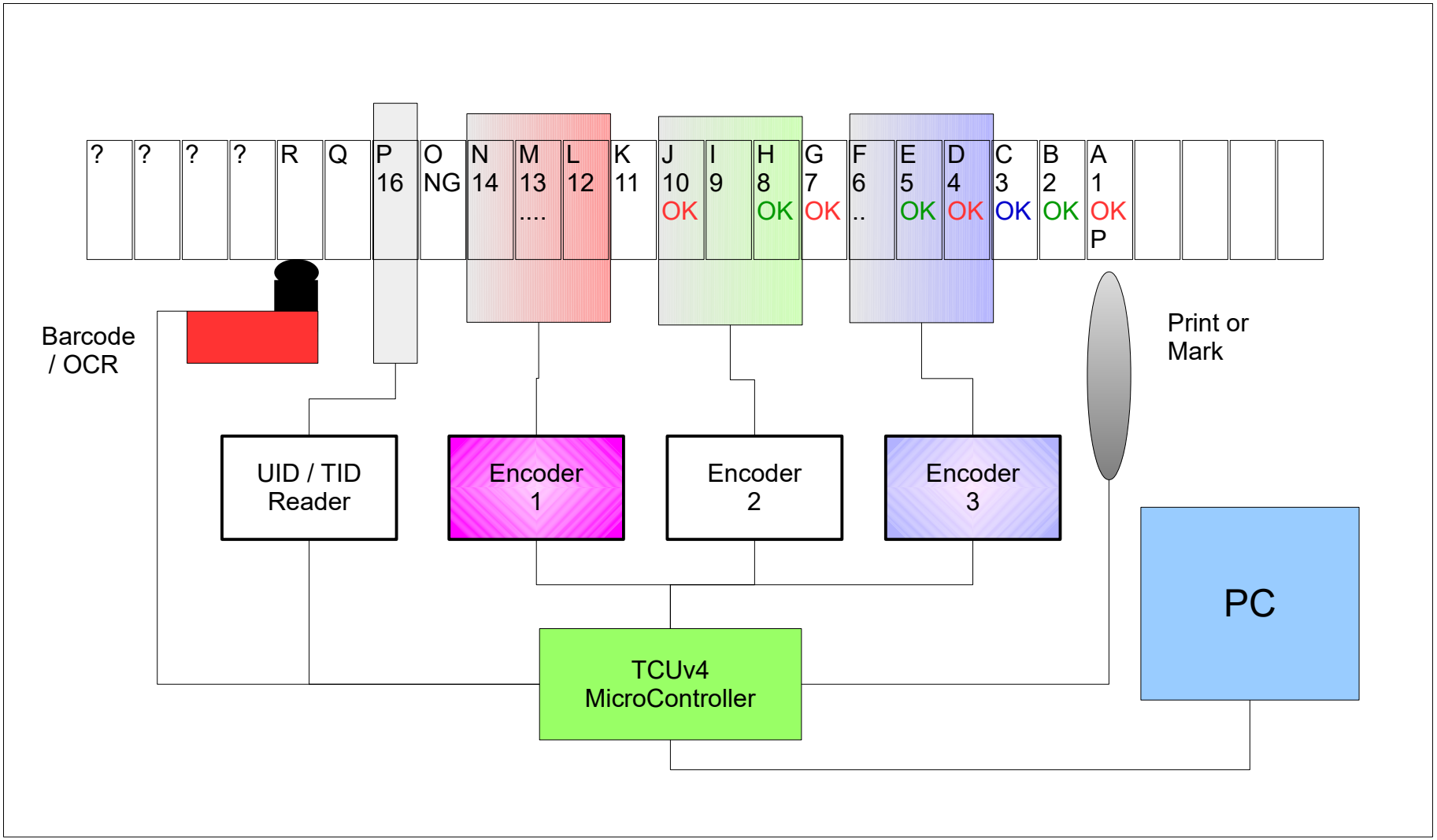
T14: Label J continues encoding on 1, data for label H is computed and queued, Encoder 3 turns on for label C. Note that label C is third in line but does not begin encoding until T14.



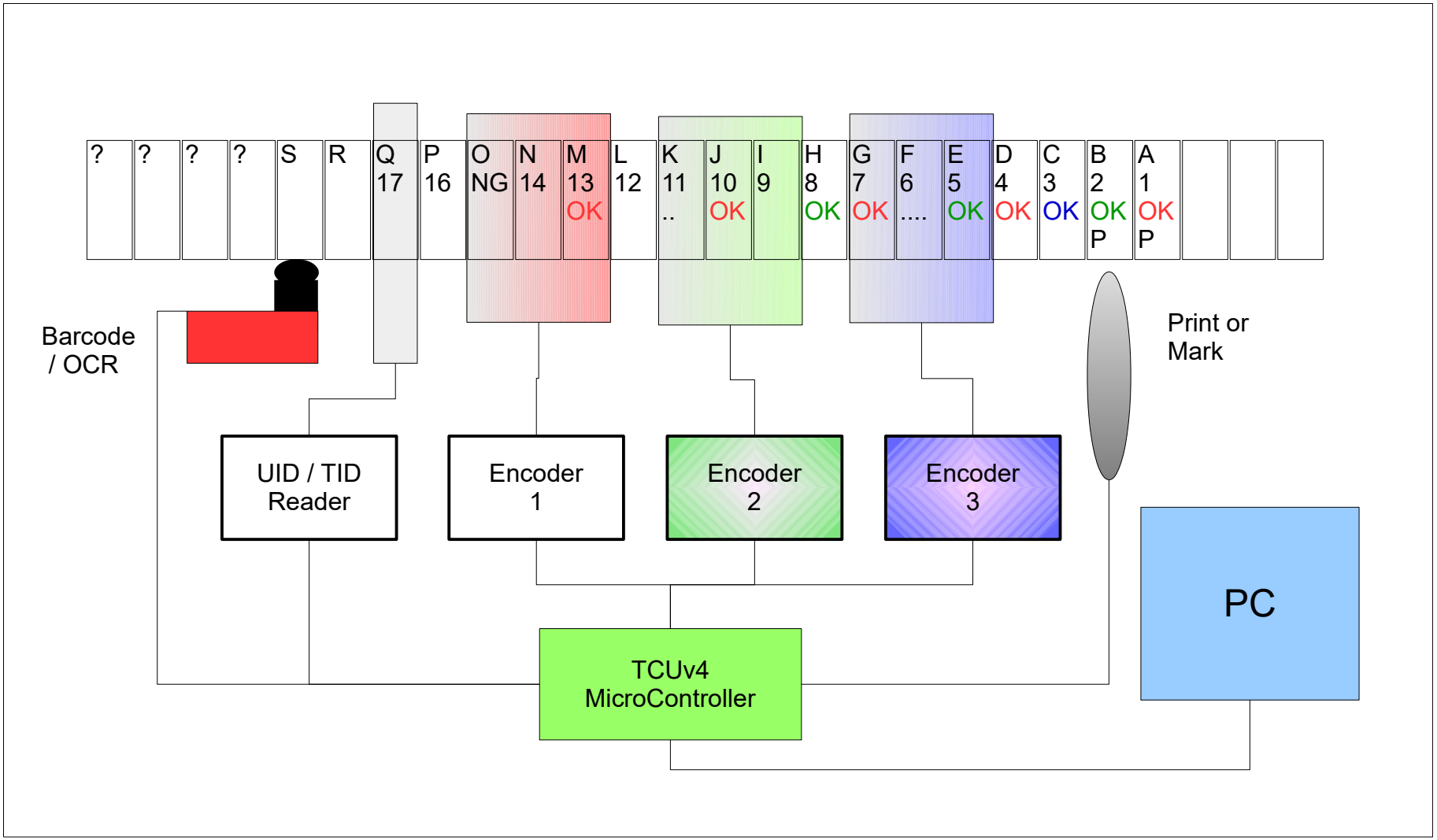
T15: Label J completes OK on Encoder 1, which turns off. Label H starts encoding on 2, which turns on. Label C continues encoding on 3.



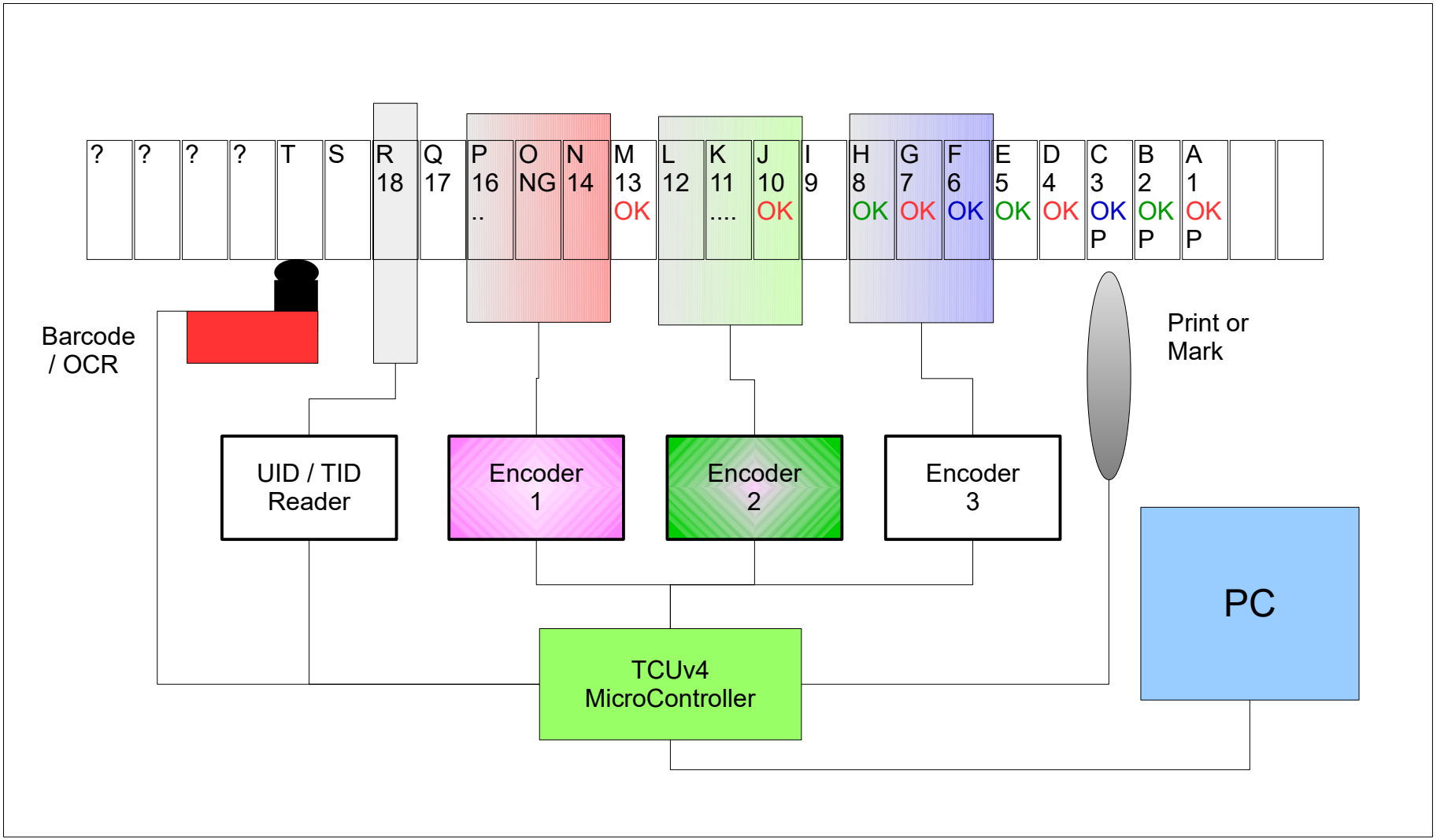
T16: Label M starts encoding on 1, which turns on. Label H continues encoding on 2. Label C completes OK on Encoder 3, which turns off. Label A is about to reach the Variable Printer, so its print data is computed and queued.
Note the first bad tag: the inlay for label O is dead, so a failure code is recorder for that UID.



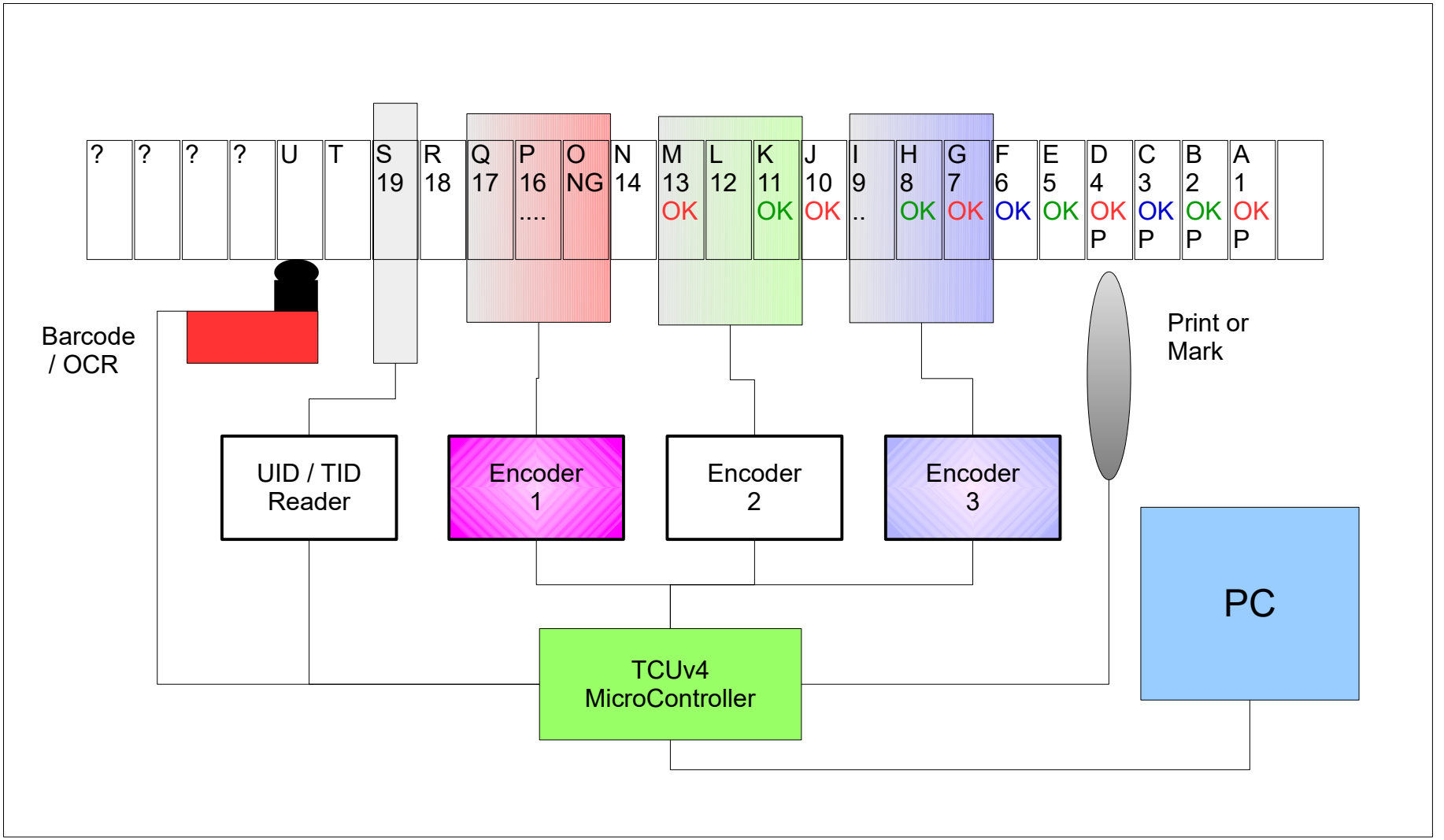
T17: Label M continues encoding on 1. Label H completes OK on Encoder 2, which turns off. Label F reaches Encoder 3, which turns on. Label A is printed, and print data is computed for label B.



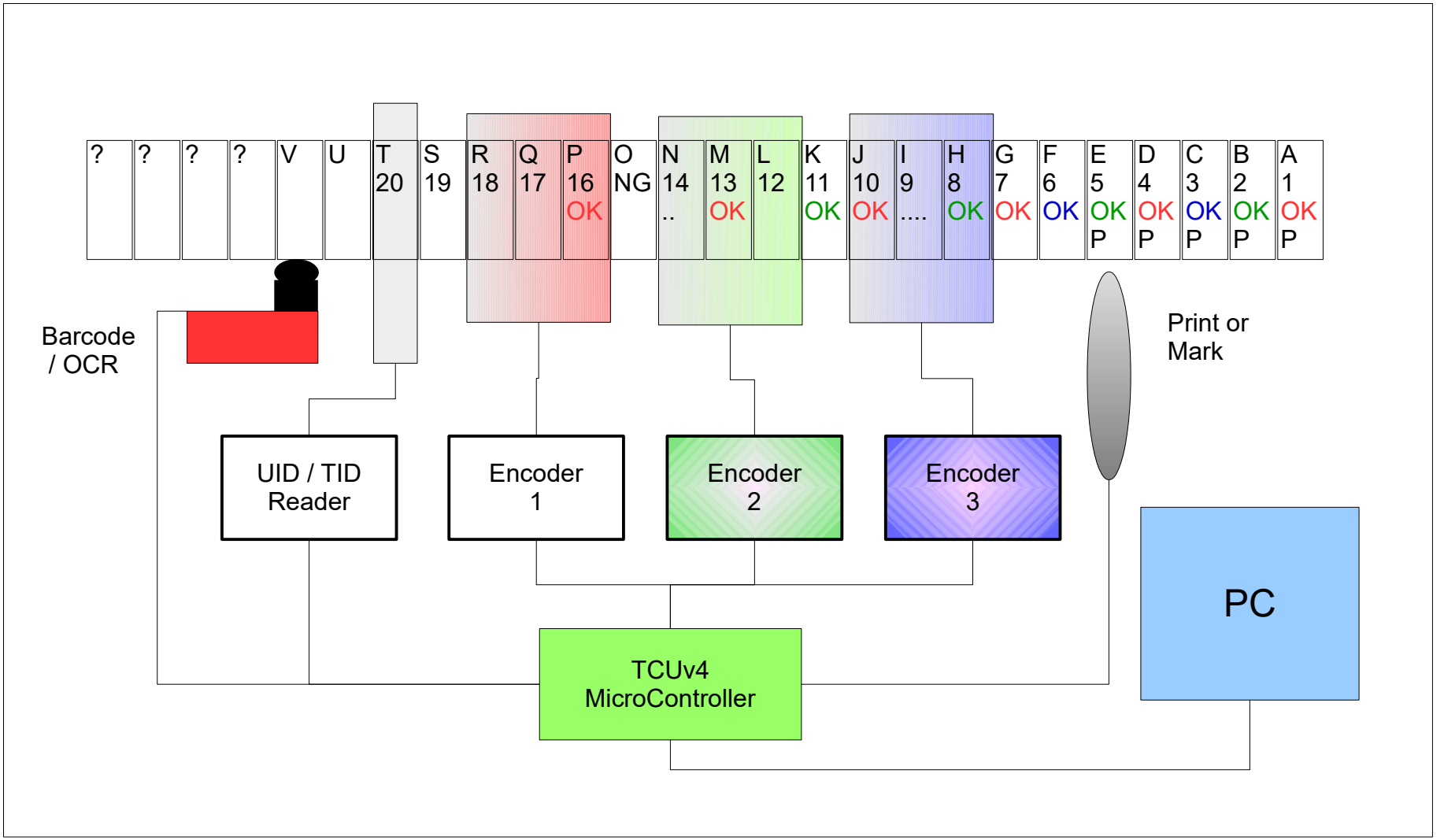
T18: Label M completes on Encoder 1, which turns off. Label K reaches Encoder 2, which turns on. Label F continues encoding on 3.



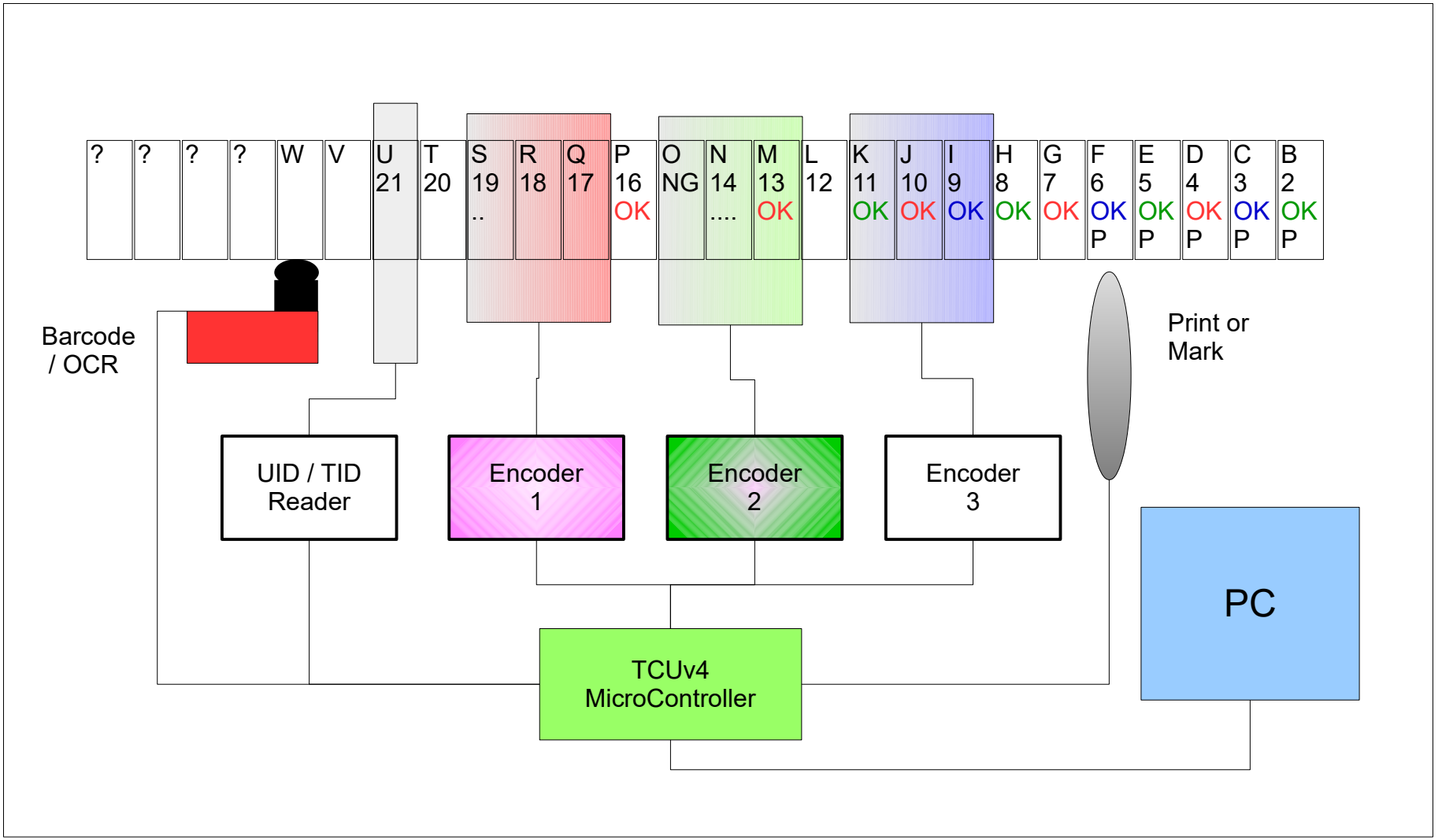
The process continues.



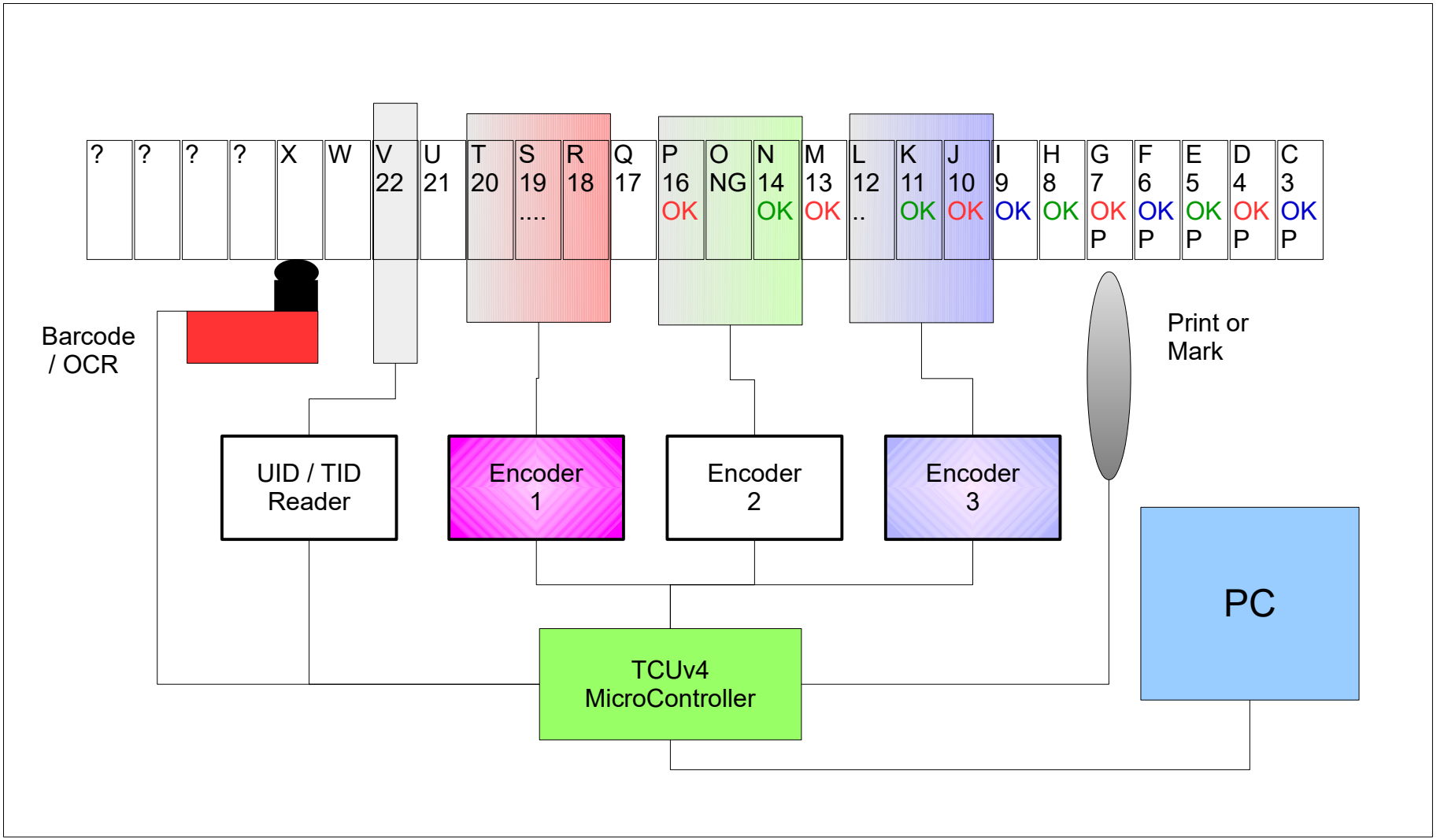
The process continues.



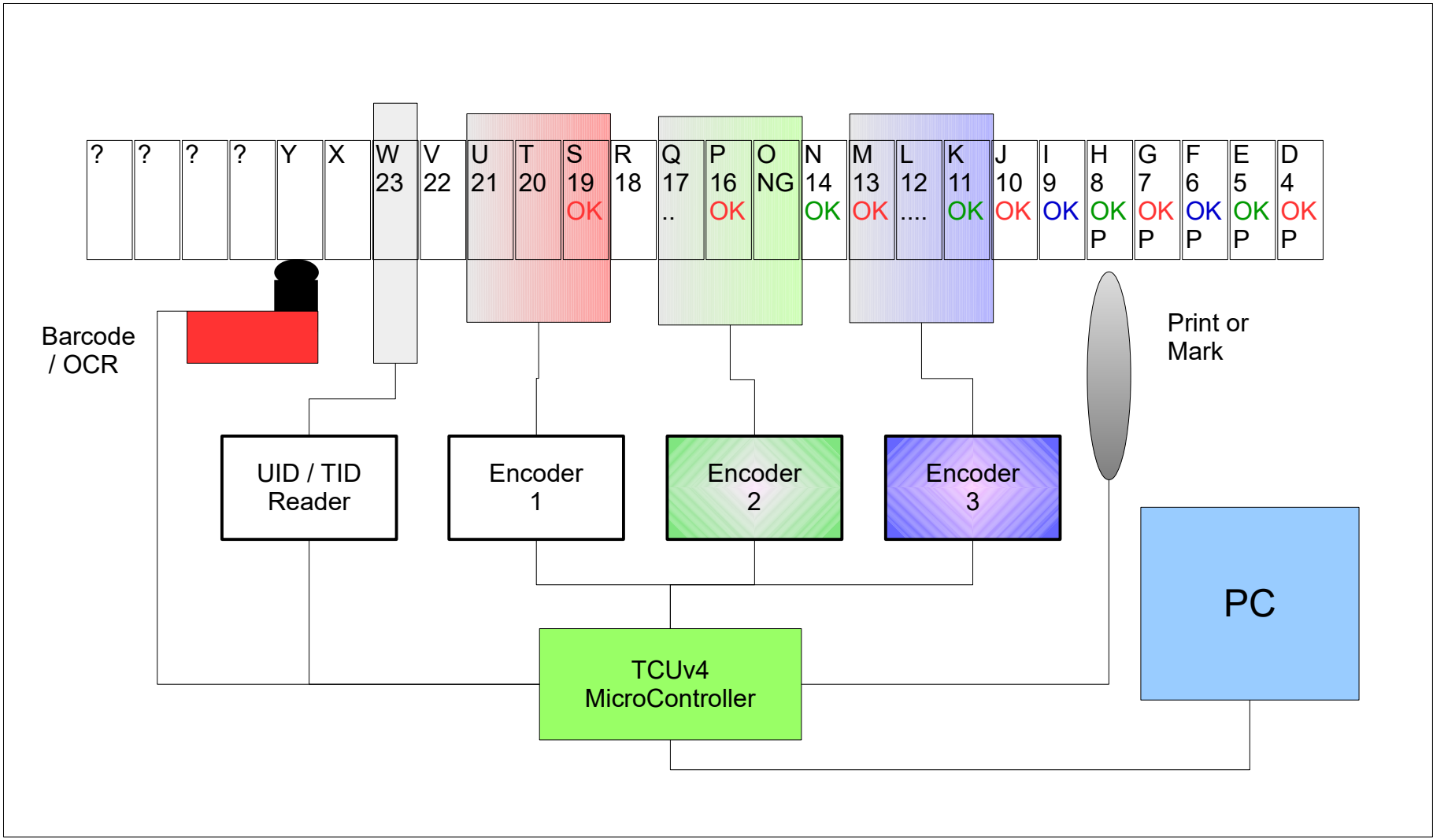
The process continues.



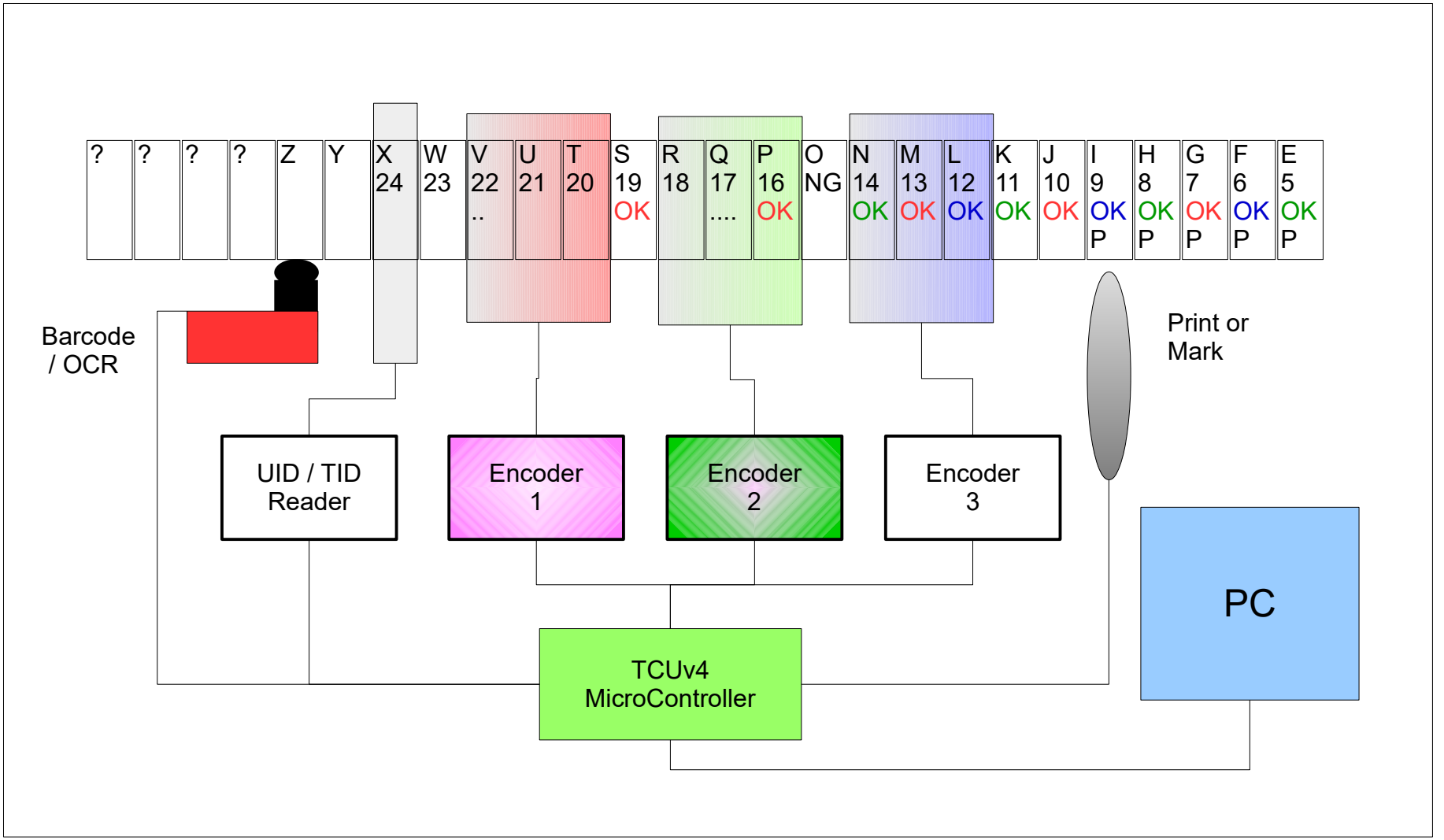
The process continues.



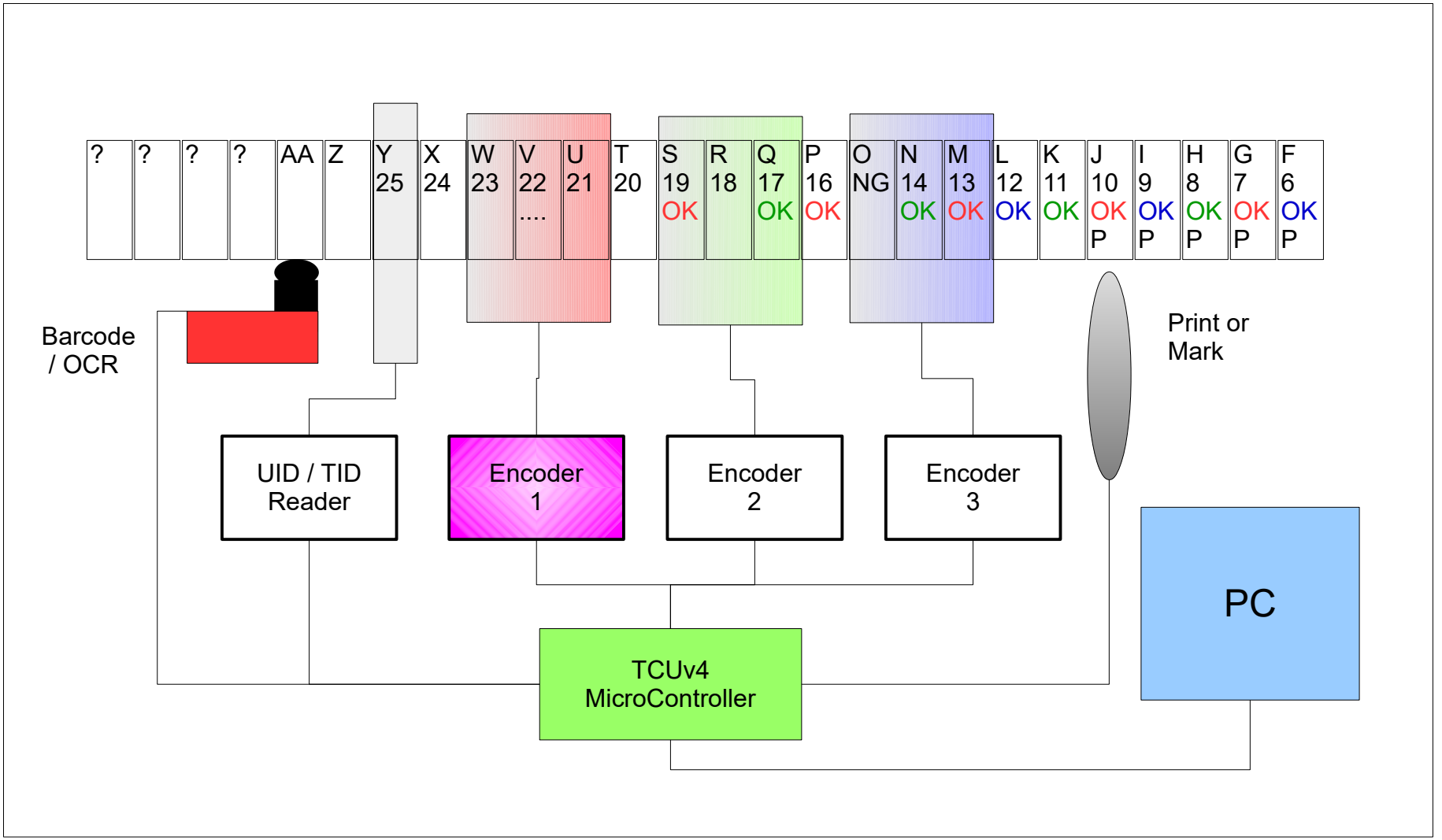
The process continues.



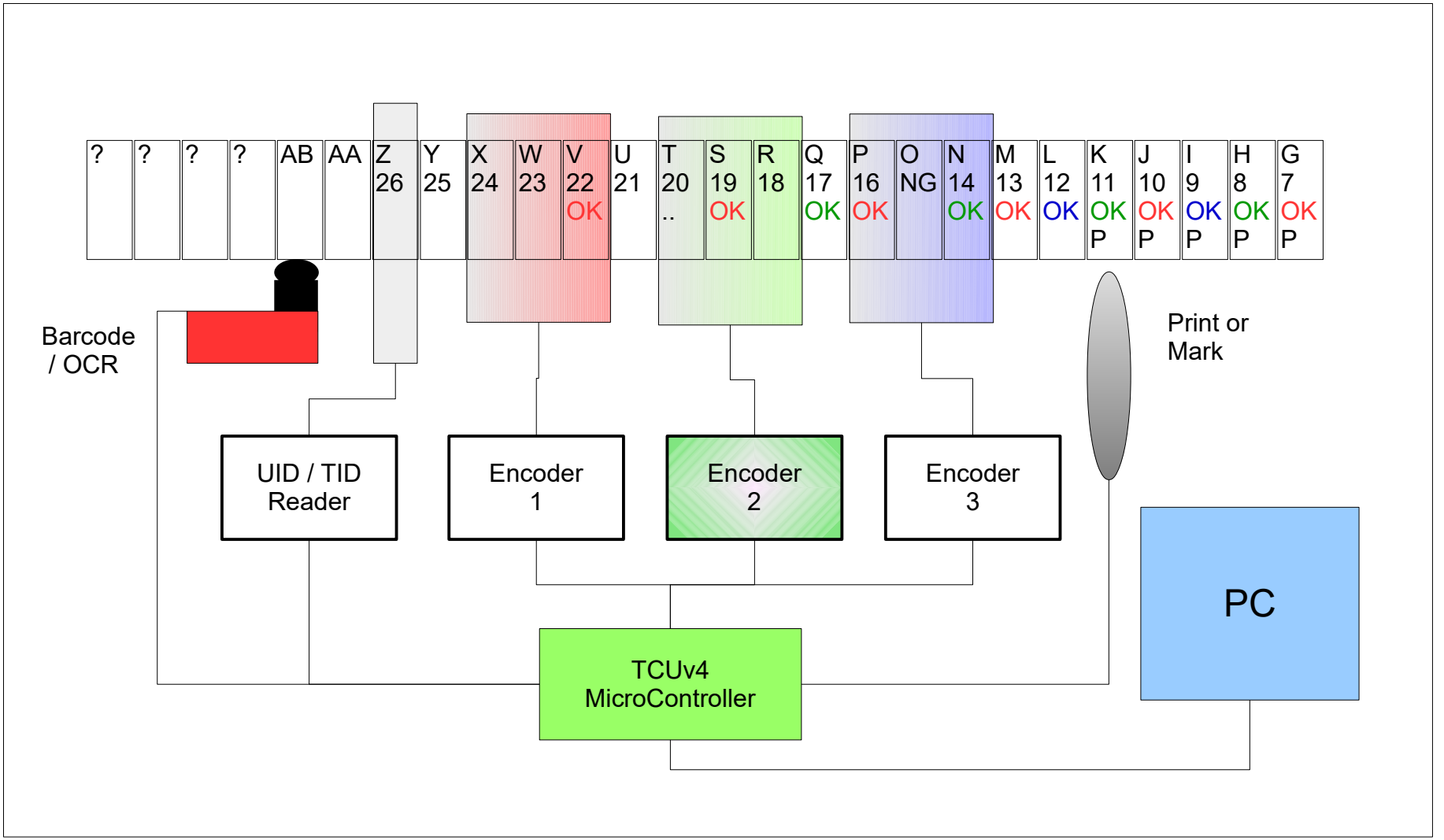
The process continues.



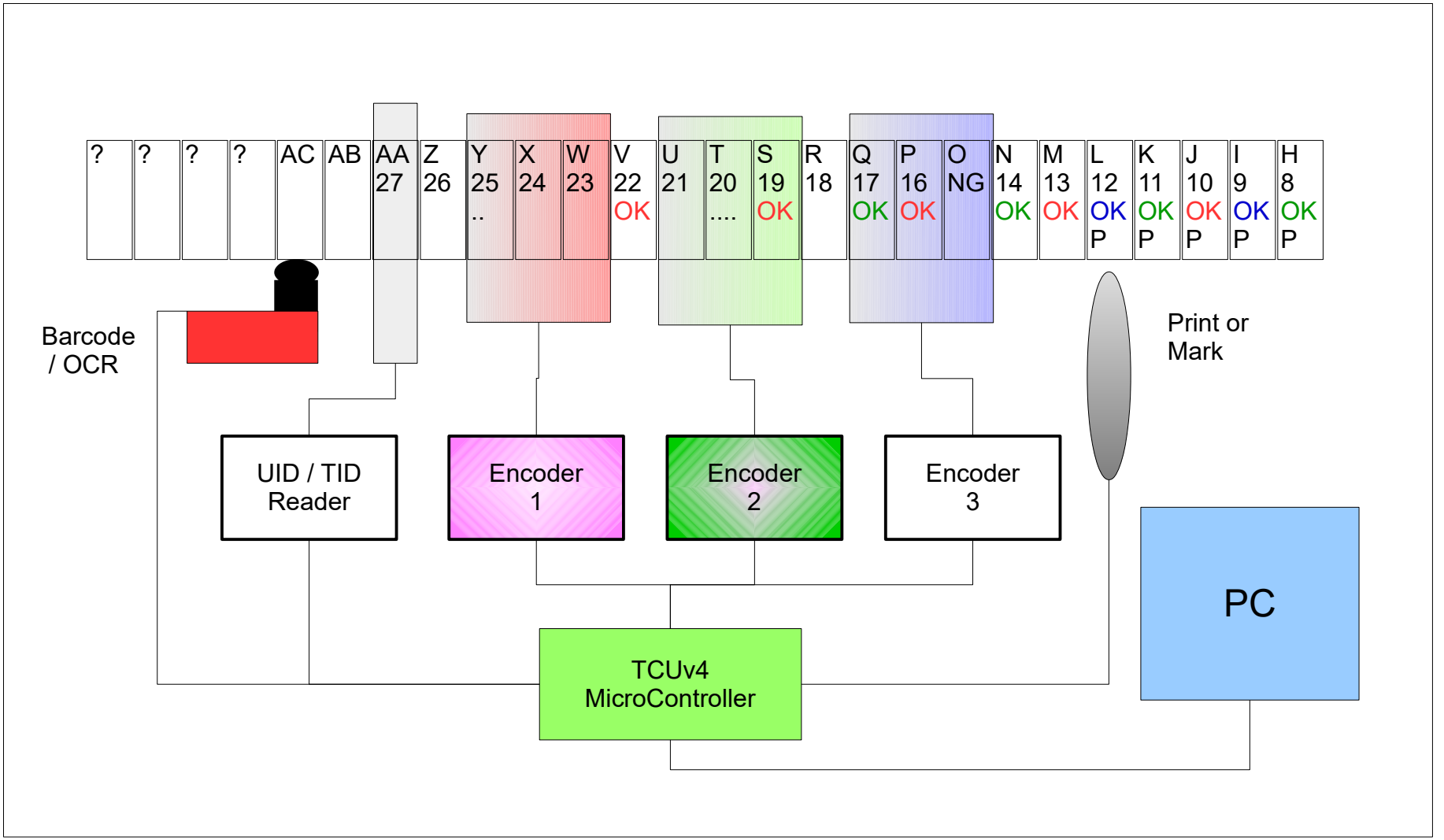
T27: The process continues. Since label O has a bad inlay, its encode data is not computed or queued.



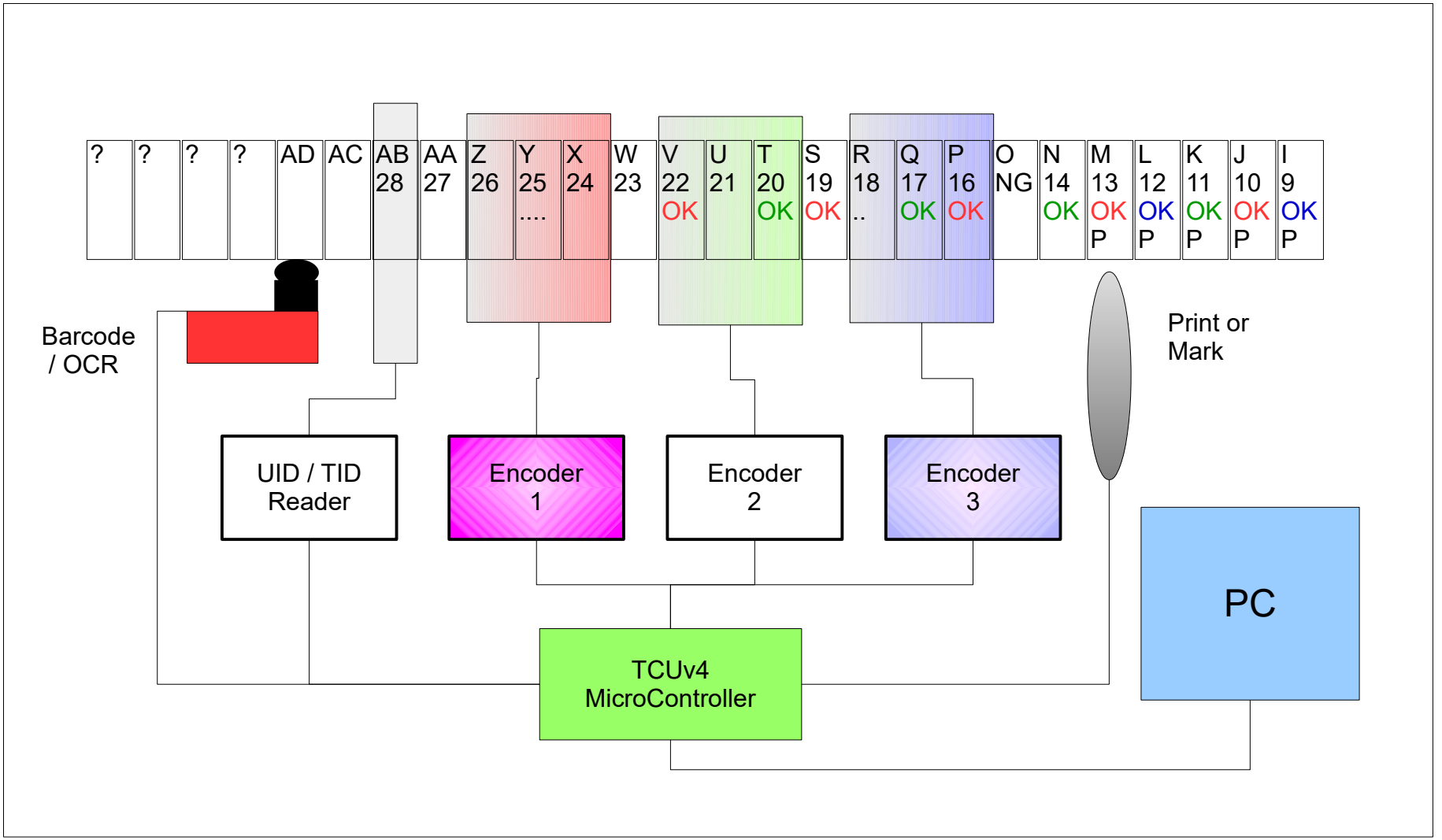
T26: The process continues. Since label O has a bad inlay, Encoder 3 does not turn on.



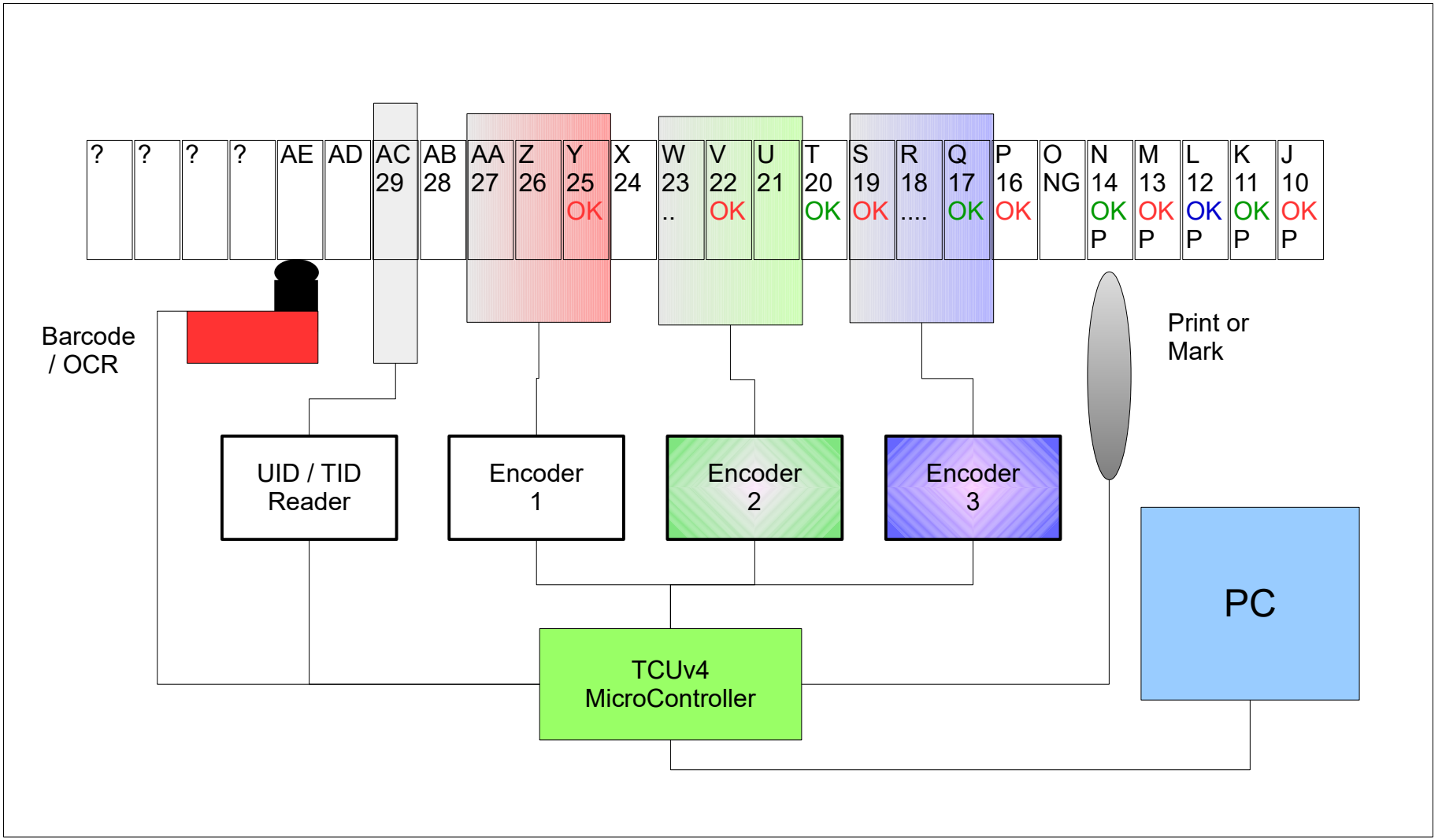
The process continues.



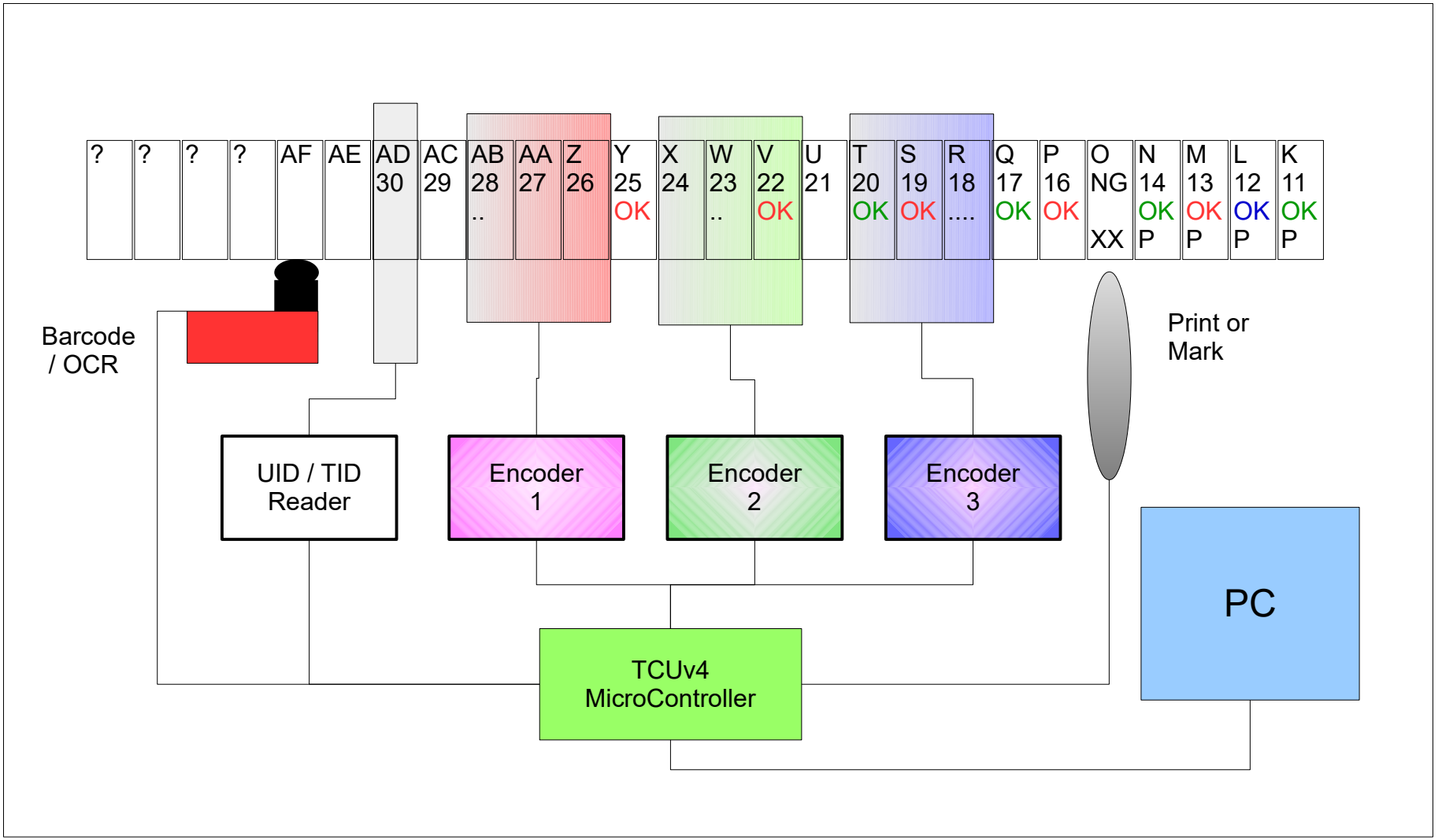
The process continues.



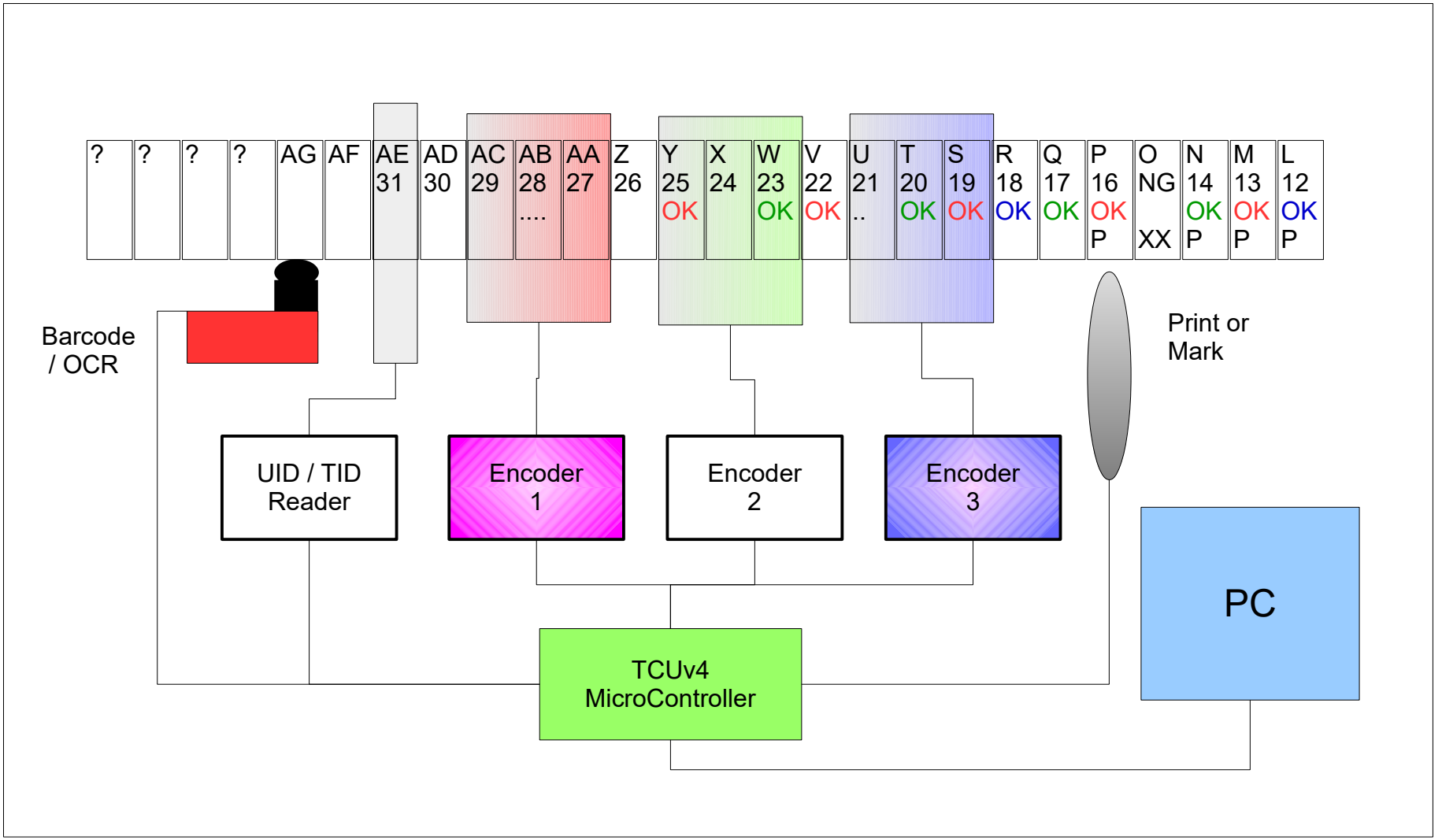
The process continues.



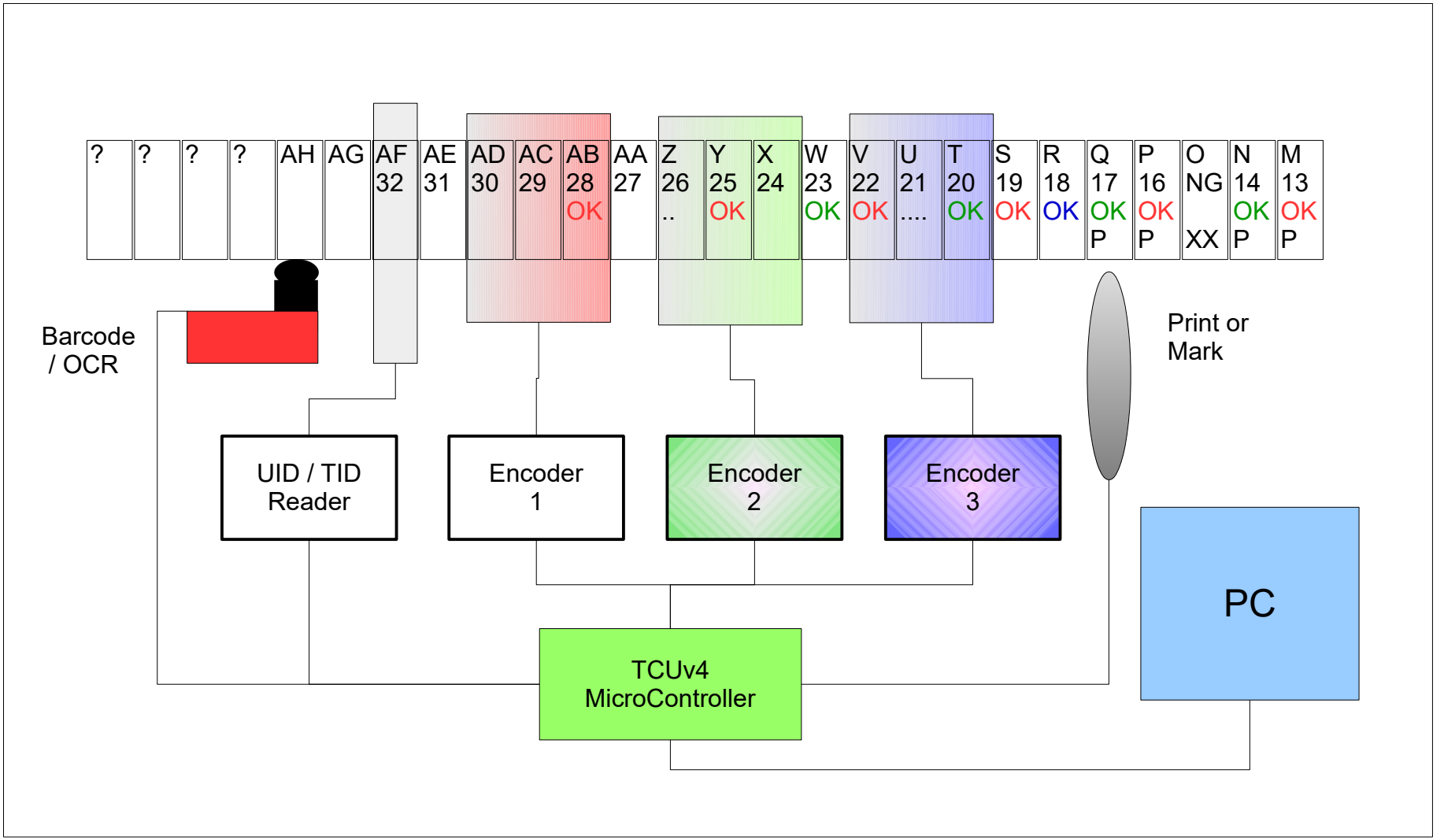
T30: The process continues. Since label O has a bad inlay, a VOID pattern is enqueued.



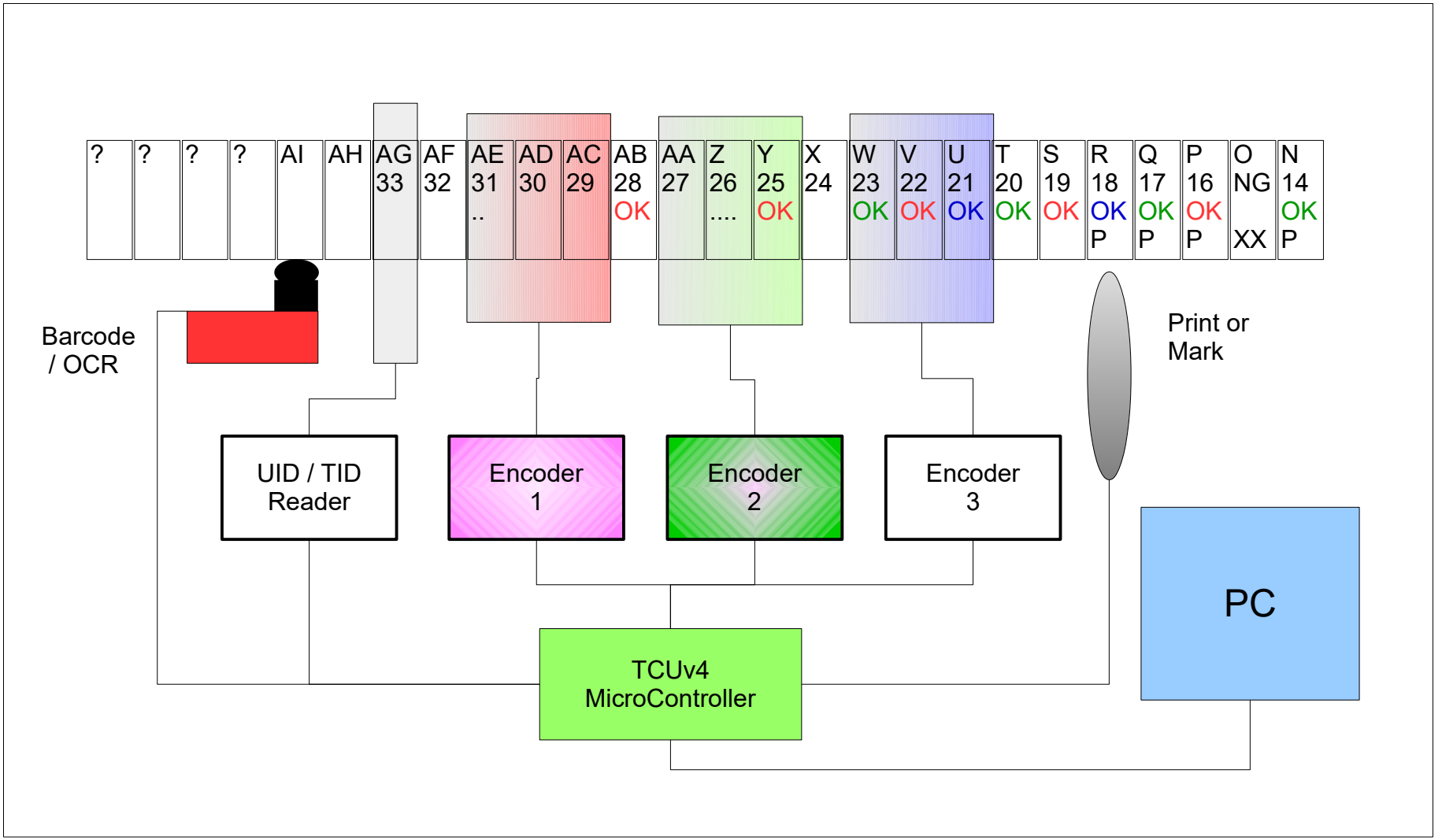
T31: The process continues. Label O is imprinted with a VOID pattern.



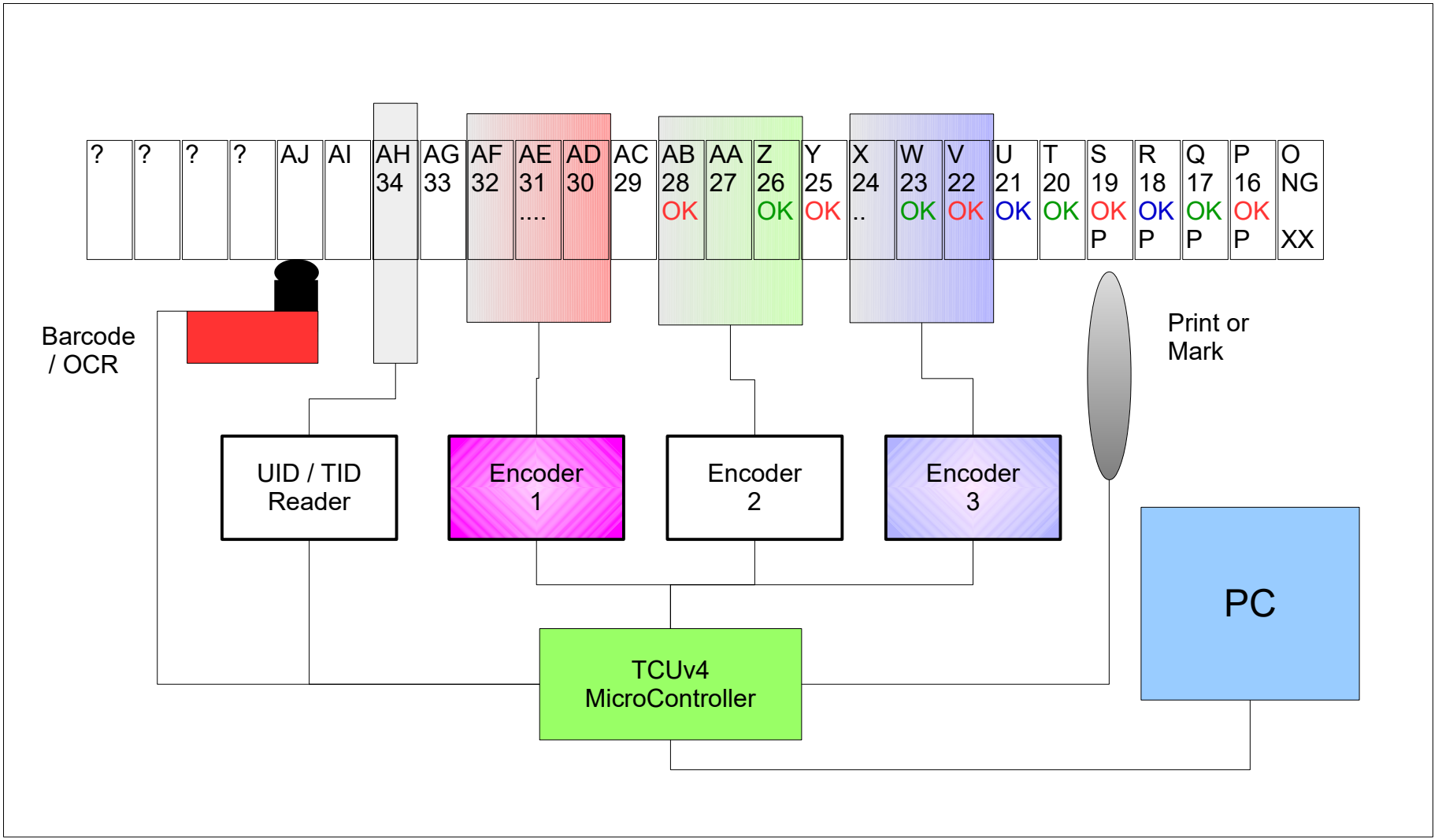
The process continues.



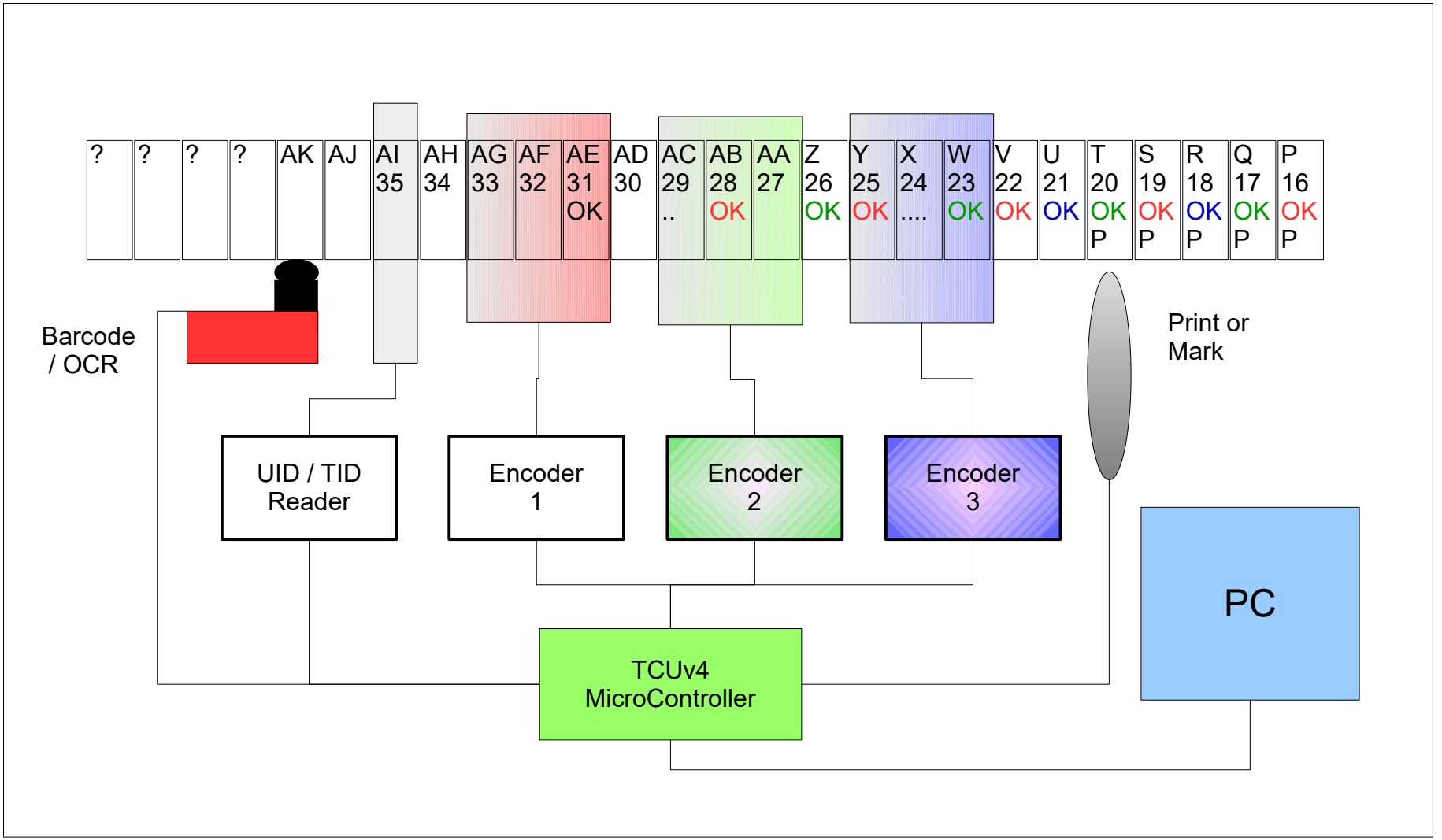
The process continues.



The process continues.



The process continues.



The process continues.