THIS DIAGRAM IS ABLE TO DEAL WITH CASE 1,2,3 and the intermediate case
between 3 and 4 (a small full section is present, but not another begin)

New TS packet

Packet_partial full ?

Check Packet_partial
CRC32 and mark the
status
PACKET_VALID if CRC32 valid
PACKET_EMPTY otherwise

CRC OK ?

Packet_partial becomes
packet_full
Packet_partial marked as
PACKET_EMPTY

There is two packets
Packet_full : contains the good packet or nothing
Packet_partial : contains the unfinished packet

The packet contains
* The buffer
* it's len
* It's status

The global structure contains the PID and the CC

There is three possible status
PACKET_EMPTY
PACKET_STARTED (packet already contains data)
PACKET_VALID (packet is full and CRC32 is valid)

Skip adaptation field

Payload_unit_start_indicator

Continuing packet

New packet

Pointer field ?

Packet status
PARTIAL ?

YES

Packet_partial status
== PACKET_STARTED ?

No

PID ok ?

YES

PID & CC ok ?

CC ok ?

YES

Yes

Append the data between the
Ts header and the beginning
of the next packet to
Packet_partial

Add data to packet
Partial

Packet_partial Full
and CRC32 OK ?

No

Packet FULL ?

Yes

YES

Packet_Partial becomes
packet_full
Packet_partial marked
as empty

Warn
Mark Packet_partial as
PACKET_EMPTY

CRC 32 ok?

YES

Packet_Partial becomes
packet_full
Packet_partial marked
as PACKET_EMPTY
Packet_full is marked
as PACKET_OK

Packet_partial status
PACKET_EMPTY

If Packet_partial status !=
PACKET_EMPTY
-> Warning

Put the data on Packet_partial
Packet_partial status becomes
PACKET_STARTED
Set PID and CC

Packet_full status
PACKET_OK ?

Yes

No

Return 0

Return 1