### Decoding process flow

#### General

Inputs to this process are all bin strings of the binarization of the requested syntax element as specified in clause 9.3.3.

Output of this process is the value of the syntax element.

This process specifies how each bin of a bin string is parsed for each syntax element. After parsing each bin, the resulting bin string is compared to all bin strings of the binarization of the syntax element and the following applies:

– If the bin string is equal to one of the bin strings, the corresponding value of the syntax element is the output.

– Otherwise (the bin string is not equal to one of the bin strings), the next bit is parsed.

While parsing each bin, the variable binIdx is incremented by 1 starting with binIdx being set equal to 0 for the first bin.

The parsing of each bin is specified by the following two ordered steps:

1. The derivation process for ctxTable, ctxIdx, and bypassFlag as specified in clause 9.3.4.2 is invoked with binIdx as input and ctxTable, ctxIdx and bypassFlag as outputs.

2. The arithmetic decoding process as specified in clause 9.3.4.3 is invoked with ctxTable, ctxIdx and bypassFlag as inputs and the value of the bin as output.

#### Derivation process for ctxTable, ctxIdx and bypassFlag

##### General

Input to this process is the position of the current bin within the bin string, binIdx.

Outputs of this process are ctxTable, ctxIdx and bypassFlag.

The values of ctxTable, ctxIdx and bypassFlag are derived as follows based on the entries for binIdx of the corresponding syntax element in Table 9‑48:

* If the entry in Table 9‑48 is not equal to "bypass", "terminate" or "na", the value of the bin is decoded by invoking the DecodeDecision process as specified in clause 9.3.4.3.2 and the following applies:
* ctxTable is specified in Table 9‑4.

9.3.4.3 Arithmetic decoding process

– If bypassFlag is equal to 1, DecodeBypass( ) as specified in clause 9.3.4.3.4 is invoked.

– Otherwise, if bypassFlag is equal to 0, ctxTable is equal to 0 and ctxIdx is equal to 0, DecodeTerminate( ) as specified in clause 9.3.4.3.5 is invoked.

– Otherwise (bypassFlag is equal to 0 and ctxTable is not equal to 0), DecodeDecision( ) as specified in clause 9.3.4.3.2 is invoked.

* The variable ctxInc is specified by the corresponding entry in Table 9‑48 and when more than one value is listed in Table 9‑48 for a binIdx, the assignment process for ctxInc for that binIdx is further specified in the clauses given in parenthesis.
* The variable ctxIdxOffset is specified by the lowest value of ctxIdx in Table 9‑4 depending on the current value of initType.
* ctxIdx is set equal to the sum of ctxInc and ctxIdxOffset.
* bypassFlag is set equal to 0.
* Otherwise, if the entry in Table 9‑48 is equal to "bypass", the value of the bin is decoded by invoking the DecodeBypass process as specified in clause 9.3.4.3.4 and the following applies:
* ctxTable is set equal to 0.
* ctxIdx is set equal to 0.
* bypassFlag is set equal to 1.
* Otherwise, if the entry in Table 9‑48 is equal to "terminate", the value of the bin is decoded by invoking the DecodeTerminate process as specified in clause 9.3.4.3.5 and the following applies:
* ctxTable is set equal to 0.
* ctxIdx is set equal to 0.
* bypassFlag is set equal to 0.
* Otherwise (the entry in Table 9‑48 is equal to "na"), the values of binIdx do not occur for the corresponding syntax element.

#### Arithmetic decoding process

##### General

Inputs to this process are ctxTable, ctxIdx and bypassFlag, as derived in clause 9.3.4.2, and the state variables ivlCurrRange and ivlOffset of the arithmetic decoding engine.

Output of this process is the value of the bin.

Figure 9‑5 illustrates the whole arithmetic decoding process for a single bin. For decoding the value of a bin, the context index table ctxTable and the ctxIdx are passed to the arithmetic decoding process DecodeBin( ctxTable, ctxIdx ), which is specified as follows:

– If bypassFlag is equal to 1, DecodeBypass( ) as specified in clause 9.3.4.3.4 is invoked.

– Otherwise, if bypassFlag is equal to 0, ctxTable is equal to 0 and ctxIdx is equal to 0, DecodeTerminate( ) as specified in clause 9.3.4.3.5 is invoked.

– Otherwise (bypassFlag is equal to 0 and ctxTable is not equal to 0), DecodeDecision( ) as specified in clause 9.3.4.3.2 is invoked.