Proposal to change the bidi class of five bidi-mirrored, non-neutral characters

This note wishes to draw the UTC’s attention to five characters whose combined bidi-mirrored and bidi-class property values are inconsistent with those of other, similar characters.

As of Unicode 5.1, there are 543 characters that have the property Bidi_Mirrored = Y (True). Of these, 538 characters have the property Bidi_Class = ON (Other_Neutral). The remaining five have the property Bidi_Class = L (Left_To_Right). These five characters are the following:

- 1D6DB  MATHEMATICAL BOLD PARTIAL DIFFERENTIAL
- 1D715  MATHEMATICAL ITALIC PARTIAL DIFFERENTIAL
- 1D74F  MATHEMATICAL BOLD ITALIC PARTIAL DIFFERENTIAL
- 1D789  MATHEMATICAL SANS-SERIF BOLD PARTIAL DIFFERENTIAL
- 1D7C3  MATHEMATICAL SANS-SERIF BOLD ITALIC PARTIAL DIFFERENTIAL

In contrast, the character 2202  PARTIAL DIFFERENTIAL, which is also a bidi-mirrored character, has Bidi_Class = ON.

Consider a text string of the form

\[ u = \partial U/\partial X \]

where lowercase denotes bidi class L and uppercase denotes bidi class R, and \( \partial \) represents one of the five symbols listed above. In an RTL context, the visual result would be \( X \partial / U \partial = u \) if \( \partial \) had bidi class ON, whereas the result is (incorrectly) \( X \partial / U u = \partial \) if \( \partial \) has bidi class L. (Adequate mirroring of the \( \partial \) symbols applies to either or both cases.)

Furthermore, since the five mathematical symbols are compatibility equivalent to U+2202, it would also seem logical for them to share the same bidi class ON as U+2202. Note also that all six characters have a General Category value of Sm and not Ll.

Therefore, it is proposed that the bidi class of 1D6DB, 1D715, 1D74F, 1D789, and 1D7C3 be changed to ON.