Murex are pleased to make the first presentation of a new volatility time interpolation method at the Frankfurt Mathfinance Conference, March 16th 2010.

Many volatility 'time interpolation' methods are questionable. 'Strike space', 'moneyness space' or 'logmoneyness space' are relatively meaningless as they ignore the dispersion of underlying price over time that is implicit in volatility.

A more intuitively satisfactory method is to interpolate smiles built in 'delta space', as delta is consistent through time whereas prices disperse. Delta space seems logical for the FX options market which quotes in 'deltas' but the market conventions raise questions over the validity of those deltas. In many other markets (for example equities, bonds, commodities) quotations are generally in terms of strike as practitioners find it difficult to agree deltas.

Ignoring the issue of conventions any method linked to delta raises question around "which delta?", e.g. spot or forward, Black-Scholes un-smiled or a delta consistent with a smile volatility? In the latter case the further question is raised "sticky-strike or "sticky-delta"? etc.

Delta space interpolation also often results in computational intensity resulting in such performance degredation that the less logical but simpler to solve time methods prevail.

Other time interpolation methods can be intuitively satisfactory, such as interpolating the parameters of a parametrically built smile (for example SABR) but these are exclusively linked to the specific smile interpolation method.

Murex propose a ***"Logical Space™"*** for time interpolation that is intuitively satisfactory and has a widespread application as it can be utilised across asset classes and is not constrained by any specific smile interpolation method. The cross asset nature means there are significant potential applications to risk management, VaR, stress testing, etc.

Murex additionally propose a variety of simplified approaches that avoid computational intensity whilst generating results within tolerable error ranges. These approaches also have a broad utility as they can equally be applied to delta interpolation.

Murex gratefully acknowledge Prof. Dr. Uwe Wystup's review of "Logical Space™"