A Appendix

Table A1. Modifier Support Page Operation and API mutations

Page Operation			
Category	Sub-Category	APIs	ARGs
Page-Tree	-	BalancePageTree	Options(int32)
	Page	NewPage	-
		NewPages	PageCount(int32)
		ClonePages	StartPage(int32), EndPage(int32), RepeatCoun(int32)
		InsertPage	StartPage(inst32), PageCount(int32)
		MovePage	NewPosition(int32)
		SelectPage	PageNumber(int32)
		DeletePages	StartPage(int32), PageCount(int32)
		HidePage	-
	Page-Box	SetPageBox	BoxType(int32), Left(double), Top(double), Width(double), Height(double)
	Page-Matrix	AddPageMatrix	xscale(double), yscale(double), xoffset(double), yoffset(double)

Table A2. Modifier Support Object Operation and API mutations

Object Operation			
Category	Sub-Category	APIs	ARGs
Table	-	CreateTable	RowCount(int32), ColumnCount(int32)
	Row	InsertTableRows	TableID(int32), Position(int32), NewRowCount(int32)
		AppendTableRows	TableID(int32), NewColumnCount(int32)
		DrawTableRows	TableID(int32), Left(double), Top(double), Height(double), FirstRow(int32), LastRow(int32)
	Column	InsertTableColumns	TableID(int32), Position(int32), NewColumnCount(int32)
		AppendTableColumns	TableID(int32), NewColumnCount(int32)
	Cell	SetTableCellContent	TableID(int32), RowNumber(int32), ColumnNumber(int32), HTMLText(unistr)
		MergeTableCells	TableID(int32),FirstRow(int32), FirstColumn(int32),LastRow(int32),LastColumn(int32)
Form	-	NewFormField	Title(unistr), FieldType(int32) : 1 = Text 2 = Pushbutton 3 = Checkbox 4 = Radiobutton 5 = Choice 6 = Signature 7 = Parent
		AddFormFieldSub	Index(int32), SubName(unistr)
Vector Graphic	Circle	DrawCircle	XPos(double), YPos(double), Radius(double), Radius(double), DrawOptions(int32)
	Box	DrawBox	Left(double), Top(double), Width(double), Height(double), DrawOptions(int32)
		DrawRoundedBox	Left(double), Top(double), Width(double), Height(double), Radius(double), DrawOptions(int32)
		DrawRoundedRotatedBox	Left(double), Bottom(double), Width(double), Height(double), Radius(double), Angle(double), DrawOptions(int32)
	Ellipse	DrawEllipse	XPos(double), YPos(double), Width(double), Height(double), DrawOptions(int32)
		DrawEllipticArc	XPos(double), YPos(double), Width(double), Height(double), StarAngle(double), EndAngle(double), Pie(int32), DrawOptions(int32)
	Line	DrawLine	StartX(double), StartY(double), EndX(double), EndY(double)
	Arc	DrawArc	XPos(double), YPos(double), Radius(double), StartAngle(double), EndAngle(double), Pie(int32), DrawOption(int32)
	Path	StartPath	Options(int32)
		AddLineToPath	EndX(double), EndY(double)
		AddArcToPath	CenterX(double0, CenterY(double), TotalAngle(double)
		AddBoxToPath	Left(double), Top(double), Width(double), Height(double)
		DrawPath	PathOptions(int32)
		DrawPathEvenOdd	PathOptions(int32)
		ClosePath	-
	QRCode	DrawQRCode	Left(debouel), Top(double), SymbolSize(double), Text(unistr), EncodeOptions(int32), DrawOptions(int32)
	BarCode	DrawBarcode	Left(double), Top(double), Width(double), Height(double), Text(unistr), Barcode(int32), Options(int32)
Text	-	DrawText	XPos(dboule), YPos(double), Text(unistr)
		DrawSpacedText	XPos(dboule), YPos(double), Spacing(double), Text(unistr)
		DrawWrappedText	Xpos(double), YPos(double), Width(double), Text(unistr)
		DrawHTMLText	Left(dbouel), Top(double), Width(double), HTMLText(unistr)
	Text-Box	DrawTextBox	Left(double), Top(double), Width(double), Height(double), Text(unistr), Options(int32)
	Text-Matrix	DrawTextBoxMatrix	Width(double), Height(double), Text(unistr), Options(int32)

Table A3. Modifier Support Attribute Operation and API mutations

Attribute Operation			
Page	Dimension	SetPageSize	PaperName(unistr)
		SetPageDimensions	NewPageWidth(double), NewPageHeight(double)
	Angle	RotatePage	PageRotation(int32)
Table	Dimension	SetTableColumnWidth	TableID(int32), FirstColumn(int32), LastColumn(int32), NewWidth(double)
		SetTableRowHeight	TableID(int32), FirstRow(int32), LastRow(int32), NewHeight(double)
	Color	SetTableCellBackgroundColor	TableID(int32), FirstRow(int32), FirstColumn(int32), LastRow(int32), Red(double), Green(double), Blue(double)
		SetTableCellTextColor	TableID(int32), FirstRow(int32), FirstColumn(int32), LastRow(int32), LastColumn(int32), Red(double), Green(double), Blue(double)
		SetTableBorderColor	TableID(int32), BorderIndex(int32), Red(double), Green(double), Blue(double)
		SetTableCellBorderColor	TableID(int32), FirstRow(int32), FirstColumn(Int32), LastRow(int32), LastColumn(int32), BorderIndex(int32), Red(double), Green (double), Blue(double)
	Text-Size	SetTableCellTextSize	TableID(int32), FirstRow(int32),FirstColumn(int32), LastRow(int32), LastColumn(int32), NewTextSize(double)
	Border-Weight	SetTableThinBorders	TableID(int32), ThinBorders(int32), Red(double), Green(double), Blue(double)
		SetTableBorderWidth	TableID(int32), BorderIndex(int32), NewWidth(double)
	Padding	SetTableCellPadding	TableID(int32), FirstRow(int32), FirstColumn(int32), LastRow(int32), LastColumn(int32), BorderIndex(int32), NewPadding(double)
Form	Color	SetFormFieldBorderColor	Index(int32), Red(double), Green(double), Blue(double)
		SetFormFieldBackgroundColor	Index(int32), Red(double), Green(double), Blue(double)
	Size	SetFormFieldTextSize	Index(int32), NewTextSize(double)
	Style	SetFormFieldChoiceType	Index(int32), ChoiceType(int32)
		SetFormFieldCheckStyle	Index(int32), CheckStyle(int32), Position(int32)
		SetFormFieldBorderStyle	Index(int32), Width(double), Style(int32), DashOn(double), DashOff(double)
	Bound	SetFormFieldBounds	Index(int32), Left(double), Top(double), Width(double), Height(double)
	Alignment	SetFormFieldAlignment	Index(int32), Alignment(int32)
	Mode	SetFormFieldHighlightMode	Index(int32), NewMode(int32)
		SetFormFieldFormatMode	NewFormatMode(int32)
	Icon	SetFormFieldIcon	Index(int32), IconType(int32), CaptureID(int32)
	Caption	SetFormFieldCaption	Index(int32), NewCaption(unistr)
	Value	SetFormFieldValue	Index(int32), NewTitle(unistr)
	Visibility	SetFormFieldVisible	Index(int32), Visible(int32)
	Font	AddFormFont	FontID(int32)
Vector Graphic	Color	SetFillColor	Red(double), Green(double), Blue(double)
		SetLineColor	Red(double), Green(double), Blue(double)
	Shader	SetFillShader	ShaderName(unistr)
	Dash	SetLineDash	DashOn(double), DashOff(double)
	Transparency	SetTransparency	Transparency(int32)
	Caption	SetLineCap	LineCap(int32)
	Mode	SetBlendMode	BlendMode(int32)
Text	Alignment	SetTextAlign	TextAlign(int32)
	Rise	SetTextRise	Rise(double)
	Underline	SetTextUnderline	Underline(int32)
		SetTextUnderlineDash	DashOn(double), DashOff(double)
		SetTextUnderlineDistance	UnderlineDistance(double)
		SetTextUnderlineWidth	UnderlineWidth(double)
	Highlight	SetTextHighlight	Highlight(int32)
	Mode	SetTextMode	TextMode(int32)
	Spacing	SetTextCharSpacing	CharSpacing(double)
		SetCharWidth	CharCode(int32), NewWidth(int32)
	Shader	SetTextShader	ShaderName(unistr)
	Caption	SetLineCap	LineCap(int32)
	Color	SetTextUnderlineColor	Red(double), Green(double), Blue(double)
		SetTextHighlightColor	Red(double), Green(double), Blue(double)
		SetTextColor	Red(double), Green (double), Blue(double)
	Font	SetHTMLBoldFont	FontSet(unistr), FontID(int32)
		SetHTMLItalicFont	FontSet(unistr), FontID(int32)
		SetHTMLBoldItalicFont	FontSet(unistr), FontID(int32)
	Size	SetTextSize	TextSize(double)