All Sky Plate Solver COM interface.

All Sky Plate Solver COM component comes with All Sky Plate Solver interactive program, into the file ASPS.dll. It is automatically registered in the system during the installation of program.
The COM component name is 'AllSkyPlateSolver.PlateSolver' and can be called by every software development system that supports the Windows COM standard automation.

All Sky Plate Solver can perform plate solving by calling it in command line with arguments, as explained here: http://astrogb.com/downloads/ASPS_CmdLine.pdf

Functions, methods and properties:

Echo				
Echo <text>			Returns the <text> parameter	
	Type: function	Returns: BSTR		
	Parameters	Type	Mode	Notes
	Text	bstr	In	Text to receive
Configure				
Configure			Shows the interactive Settings window	
	Type: method			
IndexWizard				
IndexWizard			Shows the Download Index Wizard window	
	Type: method			
PlateSolve				
PlateSolve <FileName> <FocalLength> <PixelSize> <CurrentRA> <CurrentDec> <NearRadius>				
	Performs the plate solving of image file			
	Type: method			
	Parameters	Type	Mode	Notes
	FileName	bstr	In	Star field image file. File format accepted: FITS, JPEG
	FocalLength	long	In	Optical system focal length (millimeters)
	PixelSize	double	In	Camera pixel size (microns)
	CurrentRA	double	In	Approximative right ascension of center of image (J2000), optional.
	CurrentDec	double	In	Approximative declination of center of image (J2000), optional.
	NearRadius	double	In	Radius of search if <CurrentRA> and <CurrentDec> are not zero.

Notes:	<FocalLength> and <PixelSize> are critical parameters. In order to to perform fast and reliable plate solving, they are essential. If both are zeroes, the ‘Focal length’ and ‘Pixel size’ of Settings window are considered. If the parameters <CurrentRA>, <CurrentDec> and <NearRadius> are not zeroes, the system performs the faster ‘Near’ plate solving, by using the star catalog around <CurrentRA> and <CurrentDec> coordinates, within <NearRadius> degrees. These parameters passed as zeroes cause the ‘Blind’ plate solving. If the ‘Near’ plate solving fails, the ‘Blind’ plate solving is performed, unless the <BlindSolveIfNearFails> has been previously set False. The calling waits for the process end, or the property <Abort> is set True. You alternately may use the method PlateSolveAsync, by checking iteratively the property <Done>, until it becomes True.	

PlateSolveAsync

PlateSolveAsync <FileName> <FocalLength> <PixelSize> <CurrentRA> <CurrentDec> <NearRadius>

Performs the plate solving of image file into a thread and returns the control to the calling client			
Type: method			
Parameters	Type	Mode	Notes
FileName	bstr	In	Star field image file. File format accepted: FITS, JPEG
FocalLength	long	In	Optical system focal length (millimeters)
PixelSize	double	In	Camera pixel size (microns)
CurrentRA	double	In	Approximative right ascension of center of image (J2000), optional.
CurrentDec	double	In	Approximative declination of center of image (J2000), optional.
NearRadius	double	In	Radius of search if <CurrentRA> and <CurrentDec> are not zero.
Notes:	<FocalLength> and <PixelSize> are critical parameters. In order to to perform fast and reliable plate solving, they are essential. If both are zeroes, the ‘Focal length’ and ‘Pixel size’ of Settings window are considered. If the parameters <CurrentRA>, <CurrentDec> and <NearRadius> are not zeroes, the system performs the faster ‘Near’ plate solving, by using the star catalog around <CurrentRA> and <CurrentDec> coordinates, within <NearRadius> degrees. These parameters passed as zeroes cause the ‘Blind’ plate solving. If the ‘Near’ plate solving fails, the ‘Blind’ plate solving is performed, unless the <BlindSolveIfNearFails> has been previously set False. The control of program returns to the calling client, while the procedure performs the plate solving into a thread. At end of process, or timeout, or user abort, you can consider the process finished. Then the output data is available. Only a PlateSolveAsync per time can be launched.		

RA

Type	Type	Mode	Metrics
Property	double	Out	J2000
Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the resulting Right Ascension equatorial J2000 coordinate of center of image <FileName>		

Dec				
	Type	Type	Mode	Metrics
	Property	double	Out	J2000
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the resulting Declination equatorial J2000 coordinate of center of image <FileName>		
ImageW				
	Type	Type	Mode	Metrics
	Property	long	Out	Pixels
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the number of pixels of horizontal side of image <FileName>		
ImageH				
	Type	Type	Mode	Metrics
	Property	long	Out	Pixels
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the number of pixels of vertical side of image <FileName>		
FoVW				
	Type	Type	Mode	Metrics
	Property	double	Out	Arcminutes
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the ‘field of view’ angle of horizontal side of image <FileName>		
FoVH				
	Type	Type	Mode	Metrics
	Property	double	Out	Arcminutes
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the ‘field of view’ angle of vertical side of image <FileName>		
Scale				
	Type	Type	Mode	Metrics
	Property	double	Out	Arcseconds/Pixel

	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the image scale (arcseconds per pixel) of image <FileName>		
CROTA2				
	Type	Type	Mode	Metrics
	Property	double	Out	Degrees
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the image rotation respect the celestial pole. Clockwise rotation: 0° to +180° Counterclockwise rotation: 0° downto -180°		
PosAngle				
	Type	Type	Mode	Metrics
	Property	double	Out	Degrees
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the image rotation respect the celestial pole. Clockwise rotation: 0° to 360°		
FocalLength				
	Type	Type	Mode	Metrics
	Property	long	Out	Millimeters
	Notes	Available at end of plate solving, if the property <ReturnCode> is equal 1. Reports the real focal length of optical system, calculated by the astrometric engine		
SolvedTime				
	Type	Type	Mode	Metrics
	Property	long	Out	Milliseconds
	Notes	Duration of plate solving. It is valued also in case of time-out or user-abort.		
Version				
	Type	Type	Mode	
	Property	bstr	Out	
	Notes	Returns the installed version of All Sky Plate Solver COM object		
IgnoreFitsPixelSize				
	Type	Type	Mode	Default

	Property	bool	In	False
	Notes	Used only if the parameter <PixelSize> of plate solving methods is zero.		
	If the parameter <PixelSize> of PlateSolve and PlateSolveAsync methods is zero and the FITS file header carries the pixel size value:			
	IgnorePixelSize = True	The value of “Pixel size” of Settings window is used		
	IgnorePixelSize = False	The value of FITS header pixel size is used		
IgnoreFitsFocalLength				
	Type	Type	Mode	Default
	Property	bool	In	False
	Notes	Used only if the parameter <FocalLength> of plate solving methods is zero.		
	If the parameter <FocalLength> of PlateSolve and PlateSolveAsync methods is zero:			
	If the FITS file header does not carry the focal length value:			
	The value of “Focal length” of Settings window is used			
	If the FITS file header carries the focal length value:			
	IgnoreFocalLength = True	The value of “Focal length” of Settings window is used		
	IgnoreFocalLength = False	The value of FITS header focal length is used		
BlindSolveIfNearFails				
	Type	Type	Mode	Default
	Property	bool	In	True
	Notes	Used only if <CurrentRA> and <CurrentDec> and <NearRadius> parameters are passed with non-zero values by the plate solving methods. In this situation, the methods performs the ‘Near’ solving. If it fails, by default the method performs the ‘Blind’ solving. You can inhibit the second step by setting <BlindSolveIfNearFails> = False		
TimeOutTime				
	Type	Type	Mode	Default
	Property	long	In, Out	0 (seconds)
	Notes	If > 0 before executing PlateSolve or PlateSolveAsync:		
	If TimeOutTime > 0 before executing PlateSolve or PlateSolveAsync:			
	The next plate solving process stops on reaching the preset time.			
	At end of process:			
	The property <Done> becomes True			

	The property <TimeOut> becomes True			
Abort				
	Type	Type	Mode	Default
	Property	bool	In	False
	Notes	Typically used to abort the PlateSolveAsync method as a result the user's initiative.		
	The current plate solving process ends.			
	The property <Done> becomes True			
ReturnCode				
	Type	Type	Mode	
	Property	long	Out	
	Notes	At end of plate solving methods, <ReturnCode> contains one of the following values:		
		Code	Message	
		1	Solved in <N> seconds	
		2	Error: The current version accepts only fits and jpeg image files	
		3	Error: Star index files not found	
		4	Error: File <FileName> not found	
		5	Error: Cannot create folder <FolderName>. Try again by launching All Sky Plate Solver as Administrator	
		6	Error: Cannot copy image file into <DestFileName>	
		7	Error: Process stopped by the user	
		8	Error running Astrometry.net plate solving: 8.1 Check the processing log file 8.2 Wait a few seconds before a new run 8.3 Log file not found	
		9	Error: Cannot solve image file. Check the processing log file	
		10	Error: Cannot get RA/Dec wcs data from Astrometry.net library	
		11	Error: Cannot convert jpeg file into fits format	
		12	Used only in All Sky Plate Solver interactive	
		13	Error: Time out (N) seconds	
		14	Error: Cannot perform a new precess while solving	
		15	Error: Invalid FITS header	
		21	Error: Indexes non installed	
		22	Error: Astrometry.net library not installed	

ReturnMessage				
	Type	Type	Mode	
	Property	bstr	Out	
	Notes	At end of plate solving methods, <ReturnMessage> contains the message corresponding to the <ReturnCode> property		