

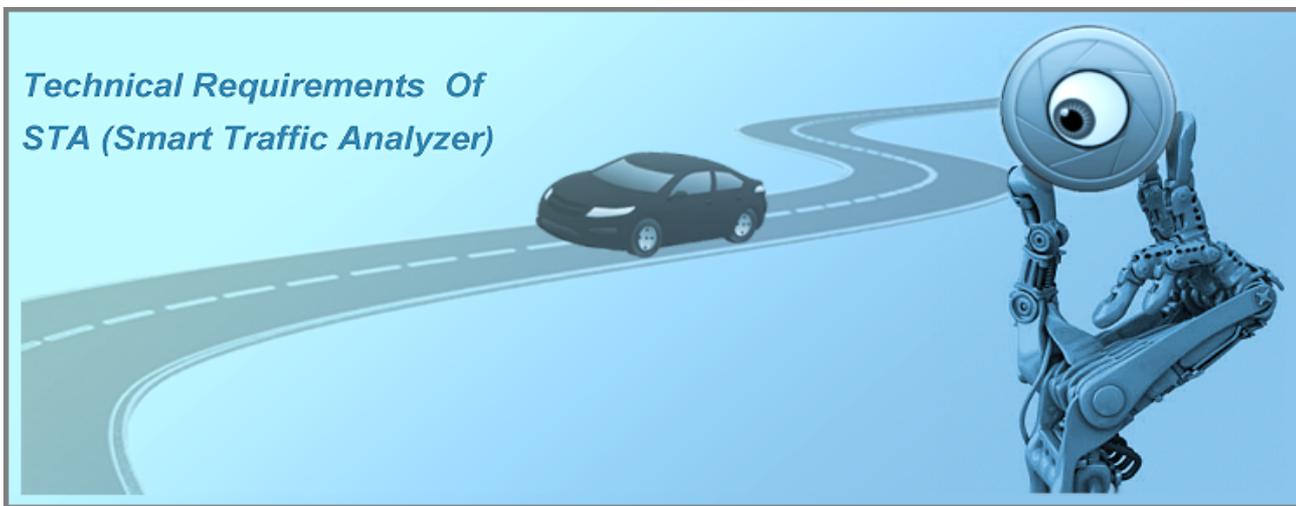
## The Technical Requirements of STA



As all professional systems based on image processing and artificial intelligence, STA needs its Technical Requirements, to achieve the maximum efficiency.

The Technical Requirements of STA can be divided into four categories:

- 1- Computer Hardware & Software
- 2- Camera Type
- 3- Camera's angle of view & installation height
- 4- Night Lighting



### 1- Computer Hardware & Software

#### Hardware

**For a single instance ( single run ) of application to process only 1 video stream:**

- Processor (CPU):

Equivalent 2.4 GHz Dual Core [ Intel® Core™ 2 Duo 2.4 GHz / AMD Athlon™ 64 X2 5600+ 2.8GHz ] or faster.

**Note:** The processing volume is directly related to the traffic volume.

- Available Memory (RAM): 1 GB or more ( if x86 OS ) / 2 GB or more ( if x64 OS )

**For multiple instances ( multiple runs ) of application to process up to 10 video streams concurrently:**

- Processor (CPU):

[ Intel® Core™ i7 series 970/3920XM/3960X or equivalents in Intel® Xeon series / and equivalents in AMD Processors ] or faster.

**Note:** The use of multi-core processors recommended.

- Available Memory (RAM): 6 GB or more ( x64 OS )

**Display:** 1024 x 768 minimum display resolution.

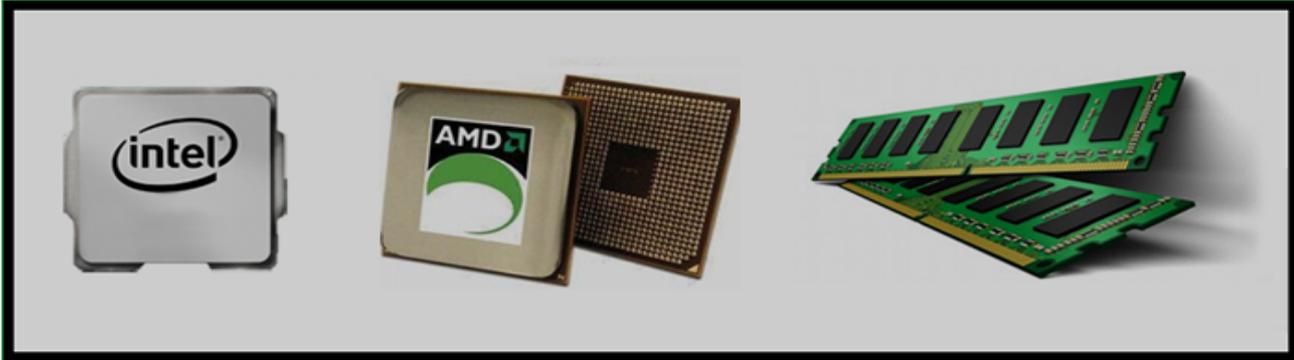
**Other:** For more performance, the use of a Soundcard, and a Speaker to listen to the sound effects,

alerts, and spoken messages recommended.

## Software

**Operating System:** Microsoft® Windows® [ XP, 2003, Vista, 7, 8, 8.1, 10 ] [ 32-bit & 64-bit ]

**Other:** DirectX 9 or later.



## 2- Camera Type

STA can use all standard outdoor cameras ( including analog cameras & IP cameras ) with:

**Preferred/Optimum Video Size:** 640 x 480 Pixels ( and at least 320 x 240 Pixels, at low bandwidth network )

**Preferred/Optimum Frame Rate:** 15 Fps ( and at least 12 Fps, at low bandwidth network )

**Note:** The camera as possible should be able to provide a clear, stable and noise-free image.

**Note:** The camera should be fixed, but if you are using a PTZ Camera, you should keep it fixed or define a home preset (position) for it- to return to the intended position (maximum after 30 seconds), STA will be coordinated automatically to continue the operations.



## 3- Camera's angle of view & installation height

The camera should be mounted at a height that the camera image ( purview ) covers a rectangle with length at least **16** meters of the road surface.

The best viewing angle can be achieved at a height between **18** and **30** meters ( usually 24 meters is the best height ), also you can somewhat increase the purview using a wide-angle lens.

**Note:** if it is not possible for you to install the camera at the proper height, in some cases you can mount the camera at other height

and angle by applying some special software settings ( e.g. rotating the image of pedestrian bridge's camera in STA ),

but in this case, the efficiency of operations will be reduced !

In the best view, the camera's mast should be installed at the roadside and the angle of view should be almost perpendicular to the - road surface, but you can also set the camera with an angle to the camera's mast ( between 0° and 45° ).

**Please read:** [Why these conditions are chosen as the best mode ?](#)

The direction of vehicles should be '**Left To Right**' or '**Right To Left**' or '**Both**' ( **Horizontal** ),

but if it is not possible for you to mount the camera in this position, or if the direction of vehicles in the current camera view is :

'Up To Down' or 'Down To Up' or 'Both' ( **Vertical** ),

you should rotate the image before start the operations using the 'Video Rotation Tool'. This option is available in:

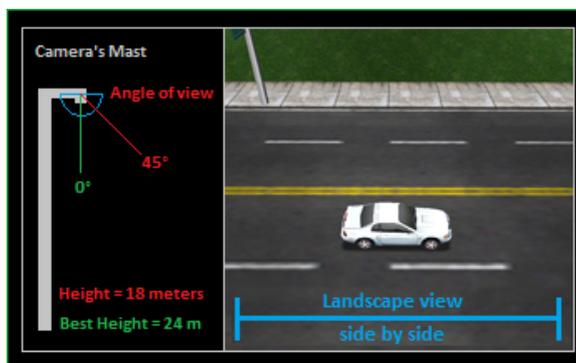
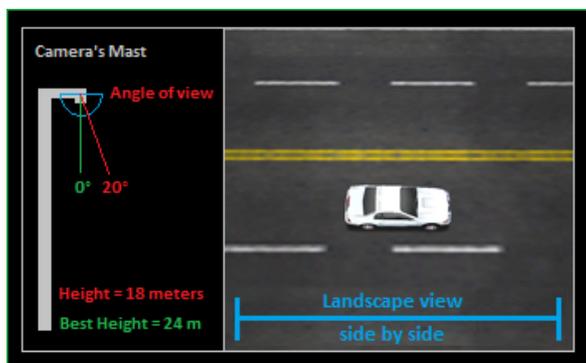
Options Menu > Video Sources & Options > Video Settings > Video Rotation.

**Note:** The camera's mast should be tightly so that the wind not able to shake it !

( also it is possible to install the camera at the proper height on buildings )

A good angle of view (about 20°)  
at a proper height (about 18 meters)

The maximum acceptable angle of view (about 45°)



#### 4- Night Lighting

If the road light (the light sources for the night) is not enough at night, you may need a **Floodlight** ( preferably 3x3 or 2x2 ) on the road-side to brighten up the road, and overcoming the reflection of vehicle lights on the road surface (to avoid reducing the accuracy of the operation).

The Floodlights can be mounted at a height between 3 and 6 meters.

Note: If it is not possible for you to install a floodlight on the road-side

you can enable and use "**Anti light-reflection filter**" in STA.



With a 2x2 Floodlight at the roadside ( at a height of 3 meters )

Without Floodlight ( Disorder in detecting, on a dark road )