CLAIMS

1. A video processing apparatus comprising:

an image capturing apparatus and a processing apparatus connected to the image capturing apparatus, wherein

the image capturing apparatus comprises:

an image obtaining unit that obtains a frame image;

a frame image transmitting unit that transmits the frame image to the processing apparatus;

a transformation parameter setting unit that sets transformation parameters received from the processing apparatus in the image capturing apparatus,;

an image transforming unit that applies an image transformation to the frame image using the transformation parameters thus set; and

a transformed frame image transmitting unit that transmits a transformed frame image to the processing apparatus, and

the processing apparatus comprises:

a transformation parameter calculating unit that calculates the transformation parameters for the image transformation, using the frame image received from the image capturing apparatus; and

a transformation parameter transmitting unit that transmits the transformation parameters to the image capturing apparatus~~.~~

~~2. The video processing apparatus according to claim 1~~, wherein the frame image transmitting unit and the transformed frame image transmitting unit included in the image capturing apparatus use different transmission rates.

~~3.~~2. The video processing apparatus according to claim 1~~ or~~

~~2~~, wherein

the image transforming unit included in the image capturing apparatus applies a perspective correction to the frame image, and

the transformation parameter calculating unit included in the processing apparatus detects a subject area from the frame image, and calculates the transformation parameters for the perspective correction.

~~4.~~ 3. The video processing apparatus according to claim ~~3~~2, wherein

the frame image transmitting unit included in the image capturing apparatus transmits frame images to the processing apparatus at a regular interval, and

the transformation parameter calculating unit included in the processing apparatus recalculates the transformation parameters for the perspective correction using the frame images received from the image capturing apparatus at the regular interval.

~~5.~~4. The video processing apparatus according to claim ~~3~~2, wherein

the frame image transmitting unit included in the image capturing apparatus transmits the frame image to the processing apparatus only when a user instruction is received, and

upon receiving the frame image from the image capturing apparatus, the transformation parameter calculating unit included in the processing apparatus recalculates the transformation parameters for the perspective correction using the frame image.

~~6.~~5. The video processing apparatus according to claim 1~~ or~~

~~2~~, wherein

the processing apparatus further comprises a zooming instruction receiving unit that receives a zooming instruction for the frame image from a user,

the transformation parameter calculating unit included in the processing apparatus calculates transformation parameters for digital zooming for enabling a frame image area specified by the user to be displayed entirely in an image, and

the image transforming unit included in the image capturing apparatus applies the digital zooming to the frame image.

~~7.~~ 6. The video processing apparatus according to claim ~~6~~5, wherein the frame image transmitting unit included in the image capturing apparatus transmits the frame image to the processing apparatus only when the zooming instruction is received from the user.

~~8.~~7. A video processing system comprising:

an image capturing apparatus and a processing apparatus connected to the image capturing apparatus over a network, wherein

the image capturing apparatus comprises:

an image obtaining unit that obtains a frame image;

a frame image transmitting unit that transmits the frame image to the processing apparatus over the network; a transformation parameter setting unit that sets transformation parameters received from the processing apparatus over the network in the image capturing apparatus;

an image transforming unit that applies an image transformation to the frame image using the transformation

parameters thus set; and

a transformed frame image transmitting unit that transmits a transformed frame image to the processing apparatus over the network, and

the processing apparatus comprises:

a transformation parameter calculating unit that calculates the transformation parameters for the image transformation, using the frame image received from the image capturing apparatus over the network; and

a transformation parameter transmitting unit that transmits the transformation parameters to the image capturing apparatus over the network.

~~9. The video processing system according to claim 8~~, wherein the frame image transmitting unit and the transformed frame image transmitting unit included in the image capturing apparatus use different transmission rates.

~~10.~~ 8. The video processing system according to claim ~~8~~ 7~~or 9~~, wherein

the image transforming unit included in the image capturing apparatus applies a perspective correction to the frame image, and

the transformation parameter calculating unit included in the processing apparatus detects a subject area from the frame image, and calculates the transformation parameters for the perspective correction.

~~11.~~9.The video processing system according to claim ~~10~~8, wherein

the frame image transmitting unit included in the image capturing apparatus transmits frame images to the processing apparatus over the network at a regular interval,

and

the transformation parameter calculating unit included in the processing apparatus recalculates the transformation parameters for the perspective correction using the frame images received from the image capturing apparatus over the network at the regular interval.

~~12.~~ 10. The video processing system according to claim ~~10~~8, wherein

the frame image transmitting unit included in the image capturing apparatus transmits the frame image to the processing apparatus over the network only when a user instruction is received, and

upon receiving the frame image from the image capturing apparatus, the transformation parameter calculating unit included in the processing apparatus recalculates the transformation parameters for the perspective correction using the frame image.

~~13.~~ 11. The video processing system according to claim ~~8~~ 7~~or 9~~, wherein

the processing apparatus further comprises a zooming instruction receiving unit that receives a zooming instruction for the frame image from a user,

the transformation parameter calculating unit included in the processing apparatus calculates transformation parameters for digital zooming for enabling a frame image area specified by the user to be displayed entirely in an image, and

the image transforming unit included in the image capturing apparatus applies the digital zooming to the frame image.

~~14.~~ 12. The video processing system according to claim ~~13~~11, wherein the frame image transmitting unit included in the image capturing apparatus transmits the frame image to the processing apparatus over the network only when the zooming instruction is received from the user.

~~15.~~ 13. A video processing method for processing a frame image using an image capturing apparatus and a processing apparatus connected to the image capturing apparatus, the video processing method comprising:

obtaining, by the image capturing apparatus, a frame image and transmitting the frame image to the processing apparatus;

calculating, by the processing apparatus, transformation parameters for an image transformation using the frame image received from the image capturing apparatus, and transmitting the transformation parameters to the image capturing apparatus; and

setting, by the image capturing apparatus, in the image capturing apparatus, the transformation parameters received from the processing apparatus, applying the image transformation to the frame image using the transformation parameters thus set, and transmitting a transformed frame image to the processing apparatus,

wherein the frame image transmitting unit and the transformed frame image transmitting unit included in the image capturing apparatus use different transmission rates.