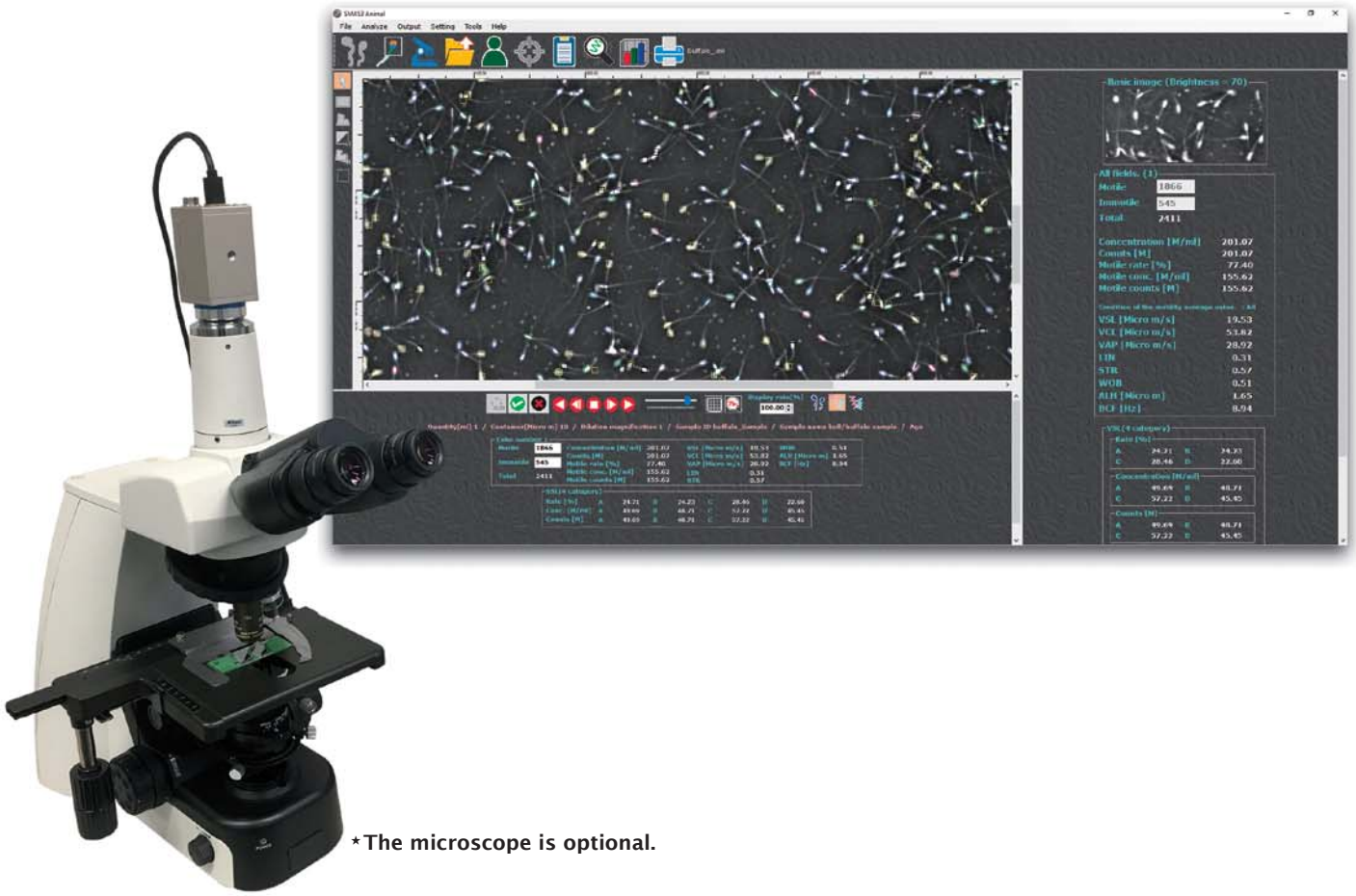
DITECT
Digital Image Technology

Sperm Motility / Morphology Analysis System
SMAS

SMAS

Sperm Motility and Morphology Analysis System

SMAS provides user friendly high-resolution sperm motility and morphology analysis, with a 5 megapixel camera. The original sperm identification algorithm will distinguish between motile and immotile spermatozoa. SMAS is the only Japanese CASA system for measuring human and animal sperm's motility, morphology and concentration. Using SMAS will give you a great advantage in reducing measurement errors during semen examination.



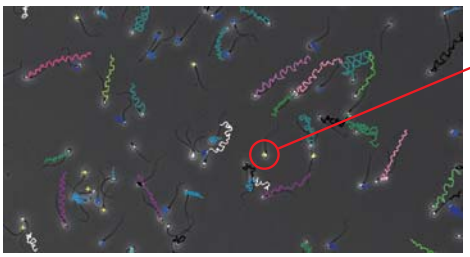
*The microscope is optional.

Sperm Motility / Morphology Analysis System

Distinguishes between motile and immotile sperm The system precisely measures total sperm count, concentration, and performes kinematic analysis in a short time.

In recent years, it has become clear that sperm morphology and motility constitute an important aspect of infertility.
The Sperm Motility / Morphology Analysis System (SMAS) automatically detects motile and immotile sperm and tracks motile sperm.
It precisely measures the number of moving sperm, their orbit, and many other items in a short time.
Measerement results are displayed on-screen and can be presented in various output forms.
SMAS is the only CASA system produced in Japan.

Characteristics



◀ sperm tracking image

* the yellow " + " indicates immotile sperm

- Motile & immotile sperm and measurement results can be confirmed in the image gained.
- With a high-resolution digital camera, the resolution is increased about four times compared to conventional products.
- About up to 5,000 motile sperms (a semen sample of about 400,000,000/ml concentration) can be measured in one field of view.
- Result data and traced image will be saved automatically after analyzing.
- Original sperm image and tracking image can be saved also.
- The analysis result can be displayed according to WHO measurement standard (1999/2010) ABCD.
- Traces are color-coded according to sperm velocity to facilitate visualization.
- Progressive sperm analyzable.
- Custom category classification / cut off filter available.
- Cost-less operation is possible by using a MAKLER counting chamber.

What can SMAS analyze?

counts

- Motile number
- Immotile number
- Total number

concentration

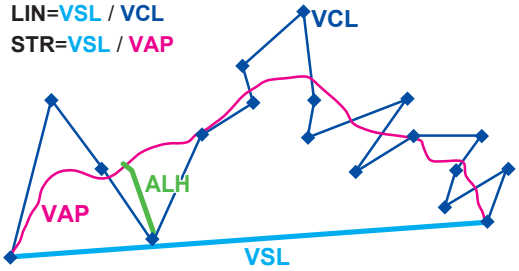
- Total concentration
- Motile concentration

motility

- Motility rate
- VSL/VCL/VAP/LIN/ STR/ALH/BCF/WOB

morphology

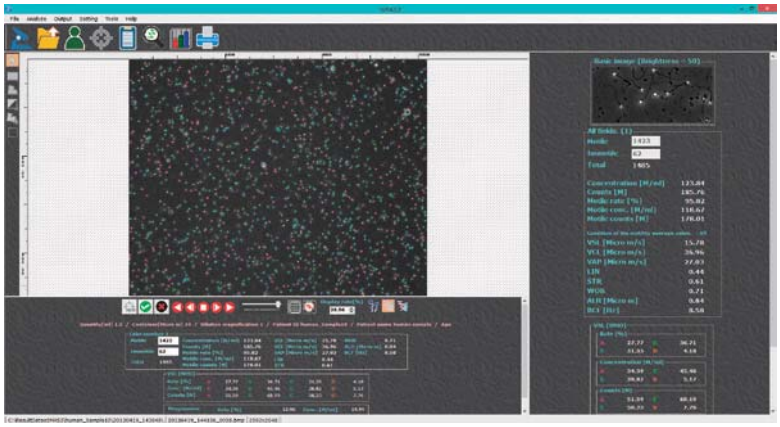
- Major (Head) [μm]
- Oval (Head) [%]
- Perimeter (Head) [μm]
- Acrosome area [μm^2]
- Midpiece width [μm]
- Midpiece position [μm]
- Bent (Tail) [deg]
- Minor (Head) [μm]
- Area (Head) [μm^2]
- Roundness (Head) [%]
- Acrosome rate [%]
- Midpiece angle [deg]
- Length (Tail) [μm]



Sperm Motility / Morphology Analysis System

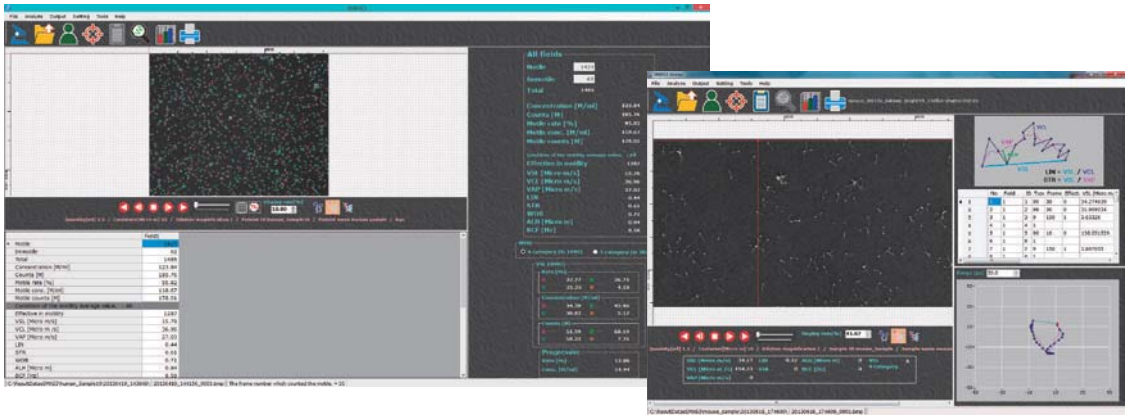
All hardware and software are developed by DITECT, a Japanese manufacturer.
We can offer flexible services such as custom parameter setting and software upgrading.
Animal spermatozoa analysis for livestock reproduction is also available.

Tracking and measurement



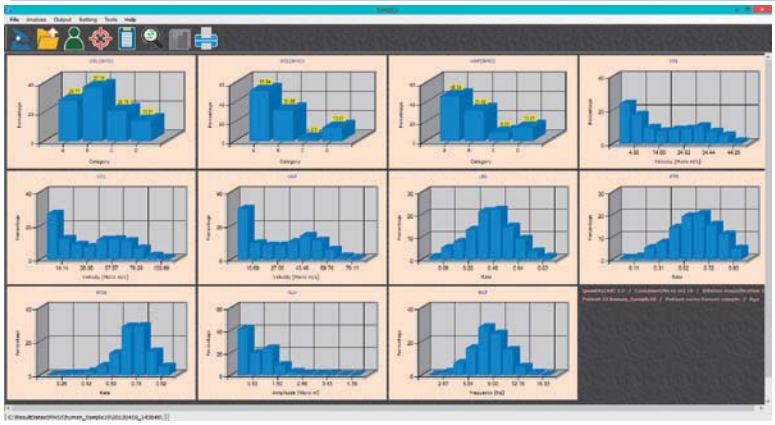
The operation is very simple. The user must only set semen on a microscope and press the imaging button. The system performs automatic processing from imaging to measurement and displays the result immediately. With an original algorithm, the system distinguishes between motile and immotile sperm. It tracks all behavior of moving sperm for one second (standard) and calculates specified items. Each sample can be measured as many times as desired in order to correct the error of bias in the chamber.

Measurement results



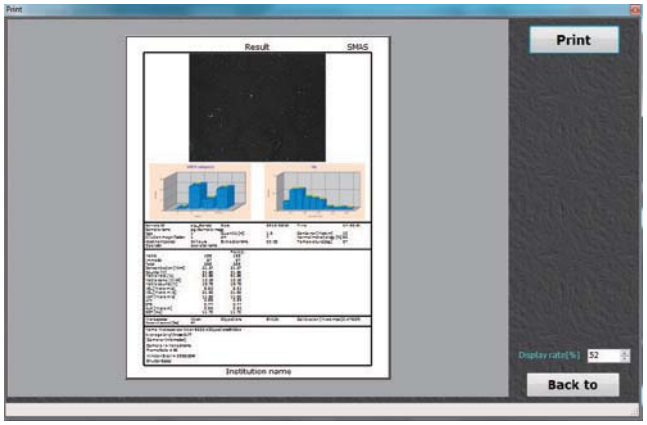
Immediately after imaging, the measurement results are displayed on the monitor as numerical data and visually. It is now possible to improve the analysis of individual motility / morphology and to make a detailed measurement of each sperm.

Analysis graph view



Based on the individual sperm trace data obtained, the system calculates count, concentration, and other analysis items. In addition, the system reports the motility results as a histogram and as WHO-compliant four - and three - stage graphs.

Reporting function



The measurement analysis results can be printed as a report data sheet. The report includes from 30 printing items, including name / age / and sub information. Also one traced image, two graphs plotting the measurement result, and five sets of measurement results laid out in on A4 paper format.

Advantage using SMAS

A reliable data from imaging

- SMAS is a imaging based CASA system. Like no other technics, measurement data are calculated using the sperm image it self and not by a statistical data or human fuzziness.

High resolution, wide view

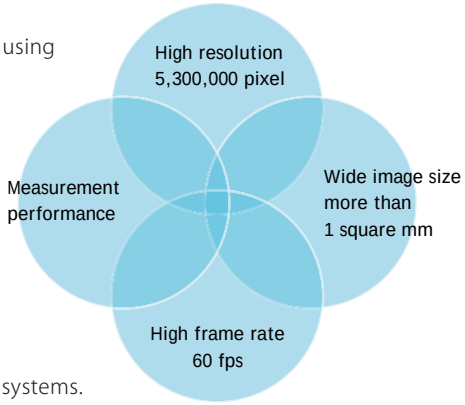
- Our 5 mega high speed camera will give SMAS a 2,592 X 2048 pixel and 60 fps and 1 square mm image field for the measurement. It is x 4, x 16 particular data than the existing models.
- This allows you to measure up to 5000 motile sperms (a semen about 400 milion/ml)

Head identification

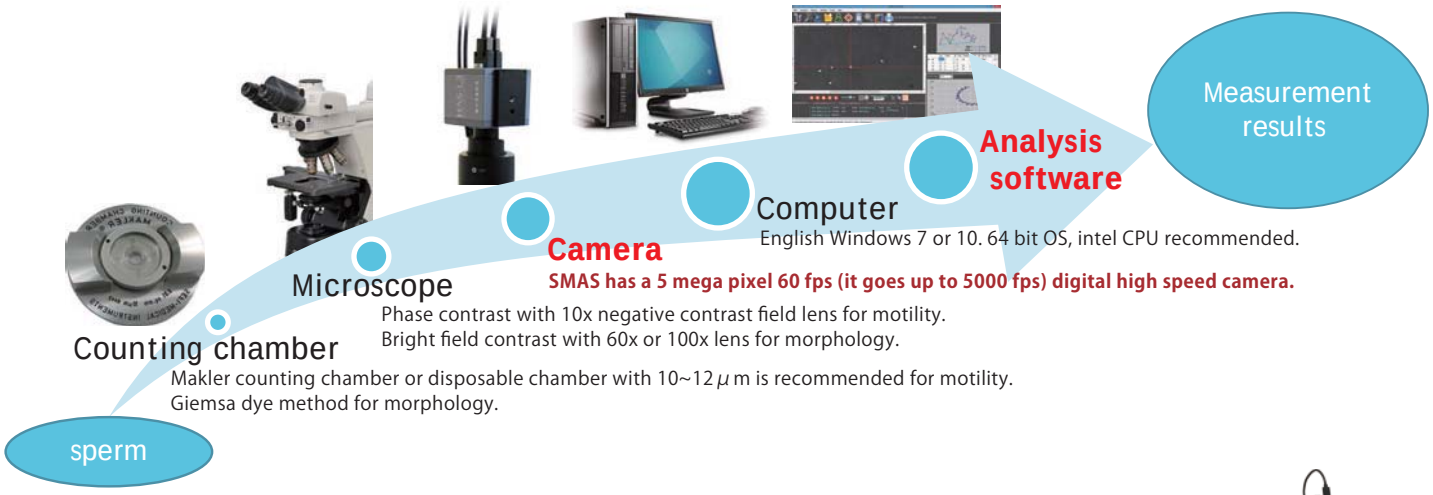
- An advanced head identification algorithm will allow SMAS to separate non-sperm particles and improve the accuracy of immotile count.

Running cost

- Using makler counting chamber will give a great cost performance than the dedicated chamber systems.



What do you need for SMAS?



Options

Measurement chamber

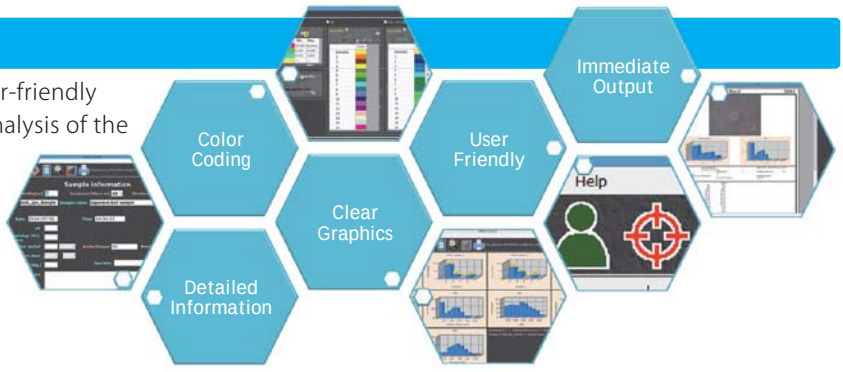
A Makler counting chamber is available.
At the customer's request, we can also offer other options, such as a 12μm disposable chamber.

Microscope

The system uses a phase-contrast microscope for SMAS motility. You need a bright-contrast microscope for SMAS morphogy.
You can also use your own microscope if it can be connected to the camera. Low-cost microscopes are also available.

Software features

SMAS will help your reproduction analysis tasks. A user-friendly interface gives you the opportunity to express your analysis of the results creatively.



(**Manufacturing authorization number** / 13BZ006277)(**Manufacturing and sale authorization number** / 13B3X00437)(**SMAS nontification number** / 13B3X00437000002) (Based on the Pharmaceutical Affairs Law issued by the Ministry of Health, Labour and Welfare of Japan.)

D/I/T/E/C/T
Digital Image Technology
DITECT Corporation
Tokyo international office : 1-8 Nanpeidai-cho, Shibuya-ku, Tokyo 150-0036, Japan
Phone : +81-3-5457-1212
http://www.ditect-corp.com/ or http://www.ditect.co.jp/
support@ditect-corp.com

Please visit our website for more detailed information about Ditect's products. Find all the product descriptions and information about future exhibitions.
You can make a request for more information and other inquiries.

eSMAS-201710