

Digital Process Analysis System

～ペガサス・デジタル作業分析システム～

Catalog Ver.317 Vector plus



English

English

English

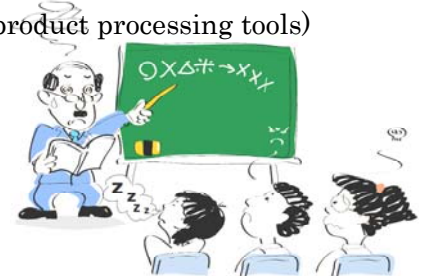
English

English

English

OUTLINE OF THE SYSTEM

- Handing down your technology (Educating newcomers)
- Process analysis, Motion analysis, Job improvement
- Management of processing technology (including management of product processing tools)
- Process simulation in a sample stage
- Drawing up a process manual including graphics
- Arranging samples and planning papers, etc
- Introducing your company (Introducing your production line)



- 1 Handing down your technology
 - Focusing on the technical points your skilled workers know and handing them down newcomers
 - Enabling you to cut down the costs for handing down your technology in the manufacturing industry
 - Standardizing differences in the education content taught by each instructor
- 2 Job improvements
 - Reviewing your job site from a new point of view while dispelling stereotypes
 - Generating valuable feedback from people at a job site
 - Job improvements that can be conducted concretely through “Visualization”

- 3 Process analysis
 - Reviewing your job site from a new point of view while dispelling stereotypes
 - Reducing analysis time by unifying reports

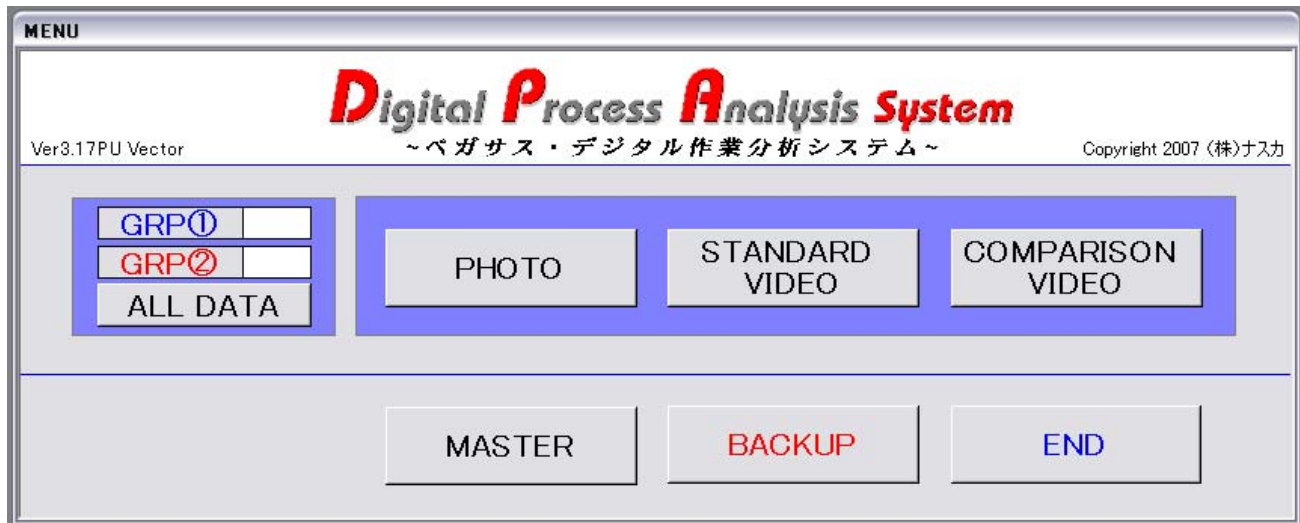


- 4 Comparison of motion
 - Enabling you to visualize the difference between newcomers and skilled workers, and the transition of the level proficiency

FEATURES OF THE SYSTEM

- 1 A tool at a production site achieved by employing a lightweight and compact digital movie camera
- 2 **No stopwatch is needed.** The time can be measured directly from moving images on the display.
- 3 Valuable, moving and still images, which are useful for **handing down your technology and process analysis**, can be recorded.
- 4 All images can be arranged (saved/stored), so everybody can handle common data easily all data can be standardized by employing in-house LAN cables, in addition, These data can be exchanged between the headquarters and subcontracted factories.
- 5 **A simulation** can be conducted on this system in order to check the balanced of each production line.
- 6 Related material made up to now in the form of Excel, Word and PDF, etc.can be connected

SYSTEM STRUCTURE

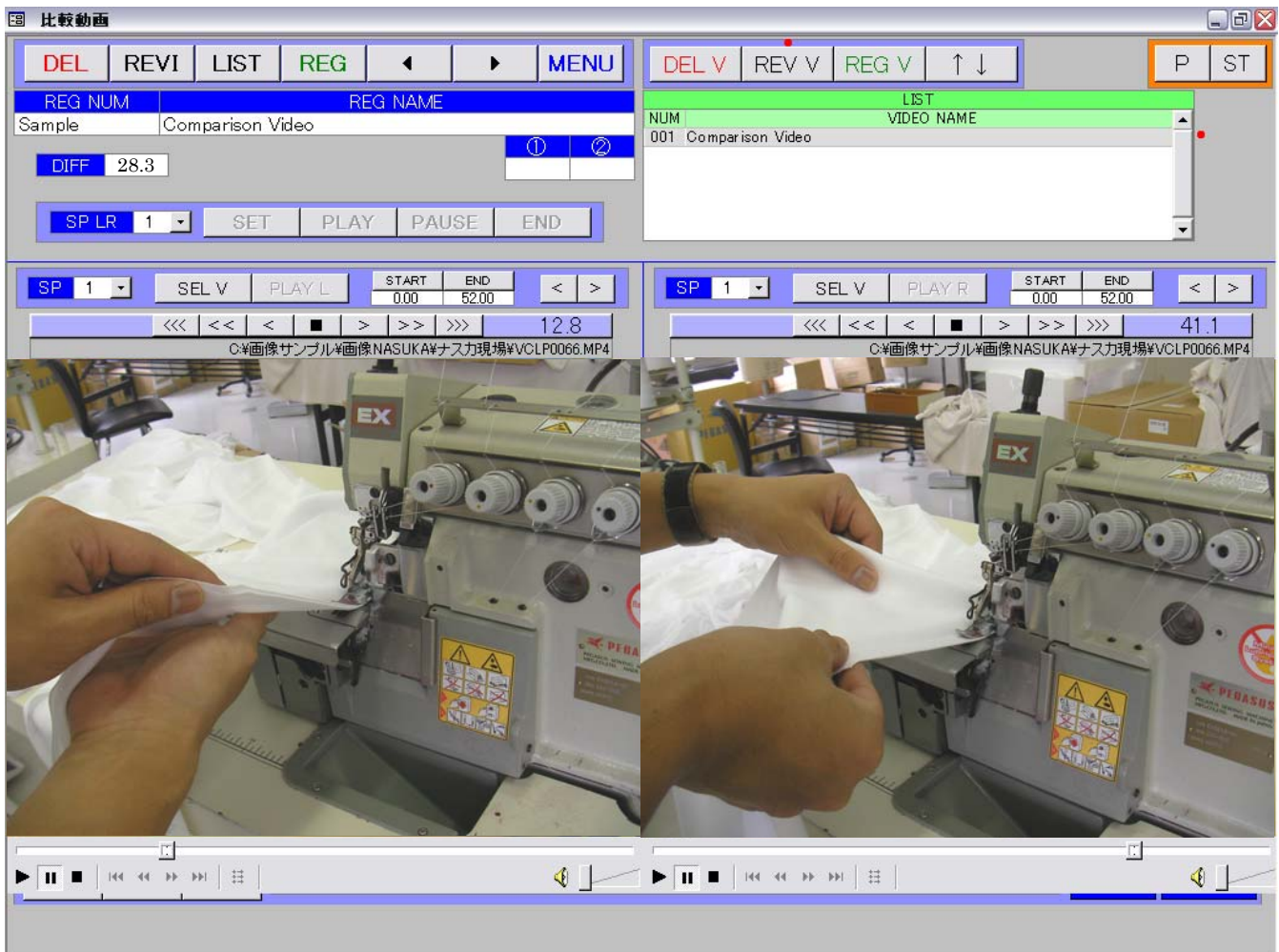


【Functions】

PHOTO	To arrange (control) data composed of multiple pictures
STANDARD VIDEO	To set the standard time for multiple moving images and/or figure out organization efficiency
COMPARISON VIDEO	To compare and judge two kinds of moving images
MASTER	To edit of inspection defect, workers & machine equipment
BACKUP	To save an important database
END	To quit the program

~UNEXPECTED CHANGE BY DPA (Movie) ~

COMPARISON OF MOVING IMAGES



【Usage purpose】

- To compare and judge standard moving images (Find out know-how of operators.)
- To compare and hand down your proprietary technology
- To compare and judge the improvement effect of production facilities

It is easy to understand how to improve the operation by comparing two moving images.
You can make your own "Manual" by moving image with improvement included.

~Edit standard operation by moving image.~

~“VESUALIZATION” BY USING “COMPARISON OF MOVING IMAGES”~

~THE DPA HANDS DOWN YOUR TECHNOLOGY THROUGH “VISUALIZATION”~

STANDARD MOVING IMAGE

REG NUM	REG NAME	GRP1	GRP2
PEGASUS001	Shirts		

NUM	LIST	NET	ST	DIFF	OFF
001	Gathering back body	38.2			
002	Join back panel	37.2			
003	Gathering front body	26.8			
004	Join front body	32.0			
005	Join right shoulder	31.3			
006	Bind neck	24.1			
007	Join left shoulder	25.1			
008	Remove thread	30.9			
009	Mark sleeve-1	57.4			
010	Gathering sleeve	41.1			
011	Mark sleeve-2	42.6			
012	Temporarily attach sleeve	45.1			
013	Attach sleeve	47.5			
014	Gathering sleeve-2	28.6			
015	Form body	39.7			
016	Bind sleeve	19.0			
017	Pre inspection	33.0			
018	Attach thread	40.7			
019	Sleeve to side seam(Left)	42.4			
020	Sleeve to side seam(Right)	45.6			
021	Attach label	26.6			
022	Topstitch side seam	34.9			
023	Tack neck and sleeve	33.7			
024	Hem bottom	26.7			
025	Inspection	36.6			
026	Operator waiting	23.7			
027	Operator waiting-2	19.7			
028	Binding - Muda	58.9			
029	Miss	83.2			
030	Miss-ok	52.8			

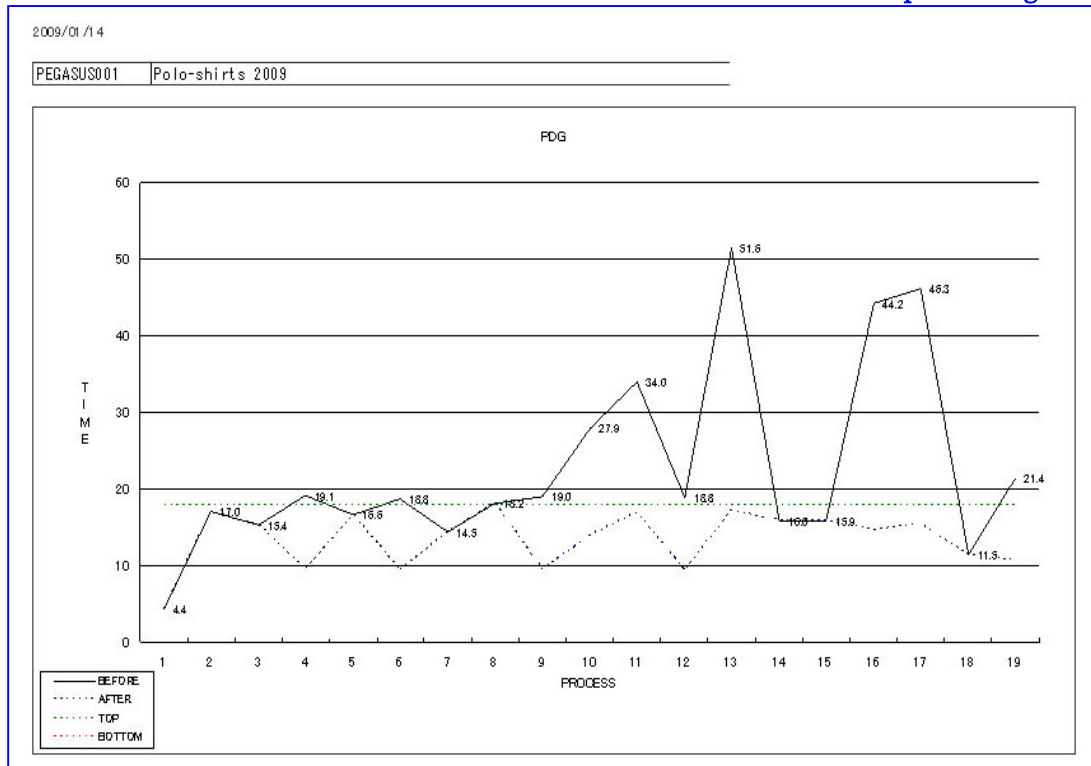
- The time can be measured from the moving images on the display
- Improvement proposal for the production line
- To hand down the description of operational motion and study the standard time
- Simulation and time measurement in a sample stage
- To check each operation (line balance)

W TIME	TARGET	LINE BAL	ST WORKING TIME	MAX(SEC)	MIN(SEC)	EST CNT	BPT
8.00H	48.1	25.0	12.5			1.2	1

NUM	VIDEO NAME	NET	OP1
001	Shoulder seam	17.4	Nishida
002	Join collar	4.1	Nakano
003	Separate collar	3.5	Yamada
004	Attach collar	22.3	Yasui
005	Set same way for Side sea	5.6	Inoue
006	Side seam	20.9	Okada
007	Blindstitch hemming botto	28.6	Yamashita
008	Cover seam collar and ma	13.1	Kawata
009	Sleeve seam	13.8	Takeda
010	Blindstitch hemming sleeve	35.5	Suzuki
011	Attach sleeve	39.0	Harada
012	Tack neck and attach labe	21.2	Murai

■ Various data can be created from the movie.

Process pitch diagram



Descriptions of operations

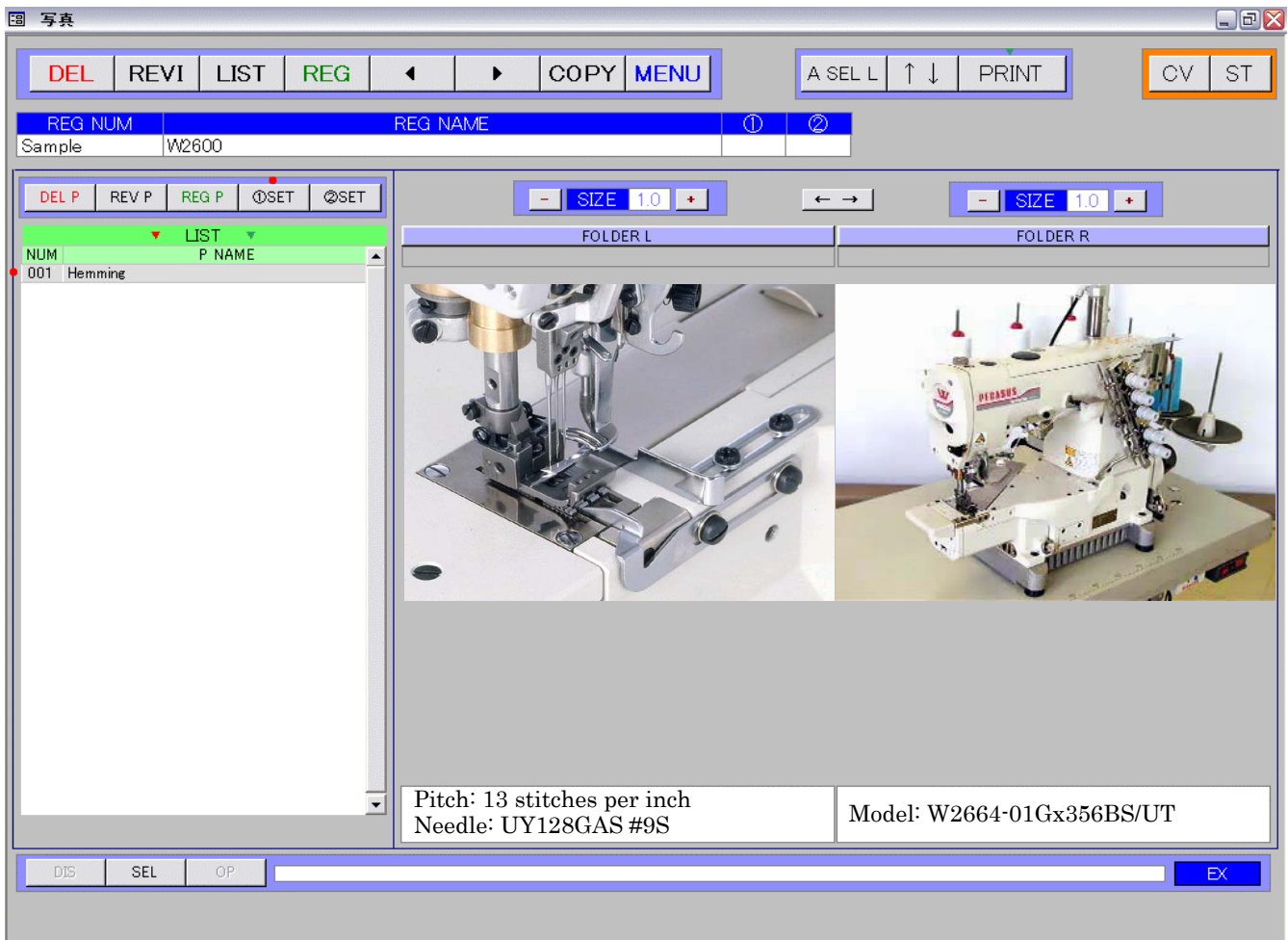
FORMATION (AUTO)										Japan002			SPORTS [Bundle] Actual			2009/01/14		
TARGET		ST WORKING TIME		PCS/OP		BPT		MPT		ACTUAL		BPT		MPT		SET		
W TIME	LINE BAL	MAX(SEC)	MIN(SEC)	OP NO	BDL NO	PREDICT	611	385	190	RATIO(%)	286	144	20	356	284	80		
8.00H	63.1	52.4	26.2	16	1	TIME(MNS)	39.3	62.3	126.3	TIME(MNS)								
49.5	16.9	58.3	12.0	39.4	26.1	33.8	34.1	39.0	38.8	28.8	32.2	41.4						
Attach pocket (Automatic)	Turn pocket	Topstitch pocket	Join panel to sleeve	Topstitch sleeve seam	Attach sleeve with piping	Attach sleeve with piping	Topstitch armhole	Topstitch armhole B collar	Sleeve to side seam	Attach cuff	Attach collar	Close collar						
1	Takeuchi	Yari	Otani	Kawata	Ichikawa	Miyami	Suzuki	Akashi	Nakano	Fukuda	Tonoda	Nakanura						
2																		
3																		
4																		
5																		
6																		
7																		
8																		
124.6	54.1																	
Attach zipper	Topstitch zipper																	
1	Saito	Ino																
2	Kita																	
3																		
4																		
5																		
6																		
7																		
8																		

Operation analysis

2009/01/14 (ACTUAL) Japan002 SPORTS [Bundle] Actual 1/1													
TARGET		ST WORKING TIME		PCS/OP		BPT		MPT		ACTUAL			
W TIME	LINE BAL	MAX(SEC)	MIN(SEC)	OP NO	BDL NO	PREDICT	611	385	190	RATIO(%)	286	144	20
8.00H	63.1	52.4	26.2	16	1	TIME(MNS)	39.3	62.3	126.3	TIME(MNS)	356	284	80
NUM	VIDEO NAME	NET	OP1	OP2	OP3	OP4	OP5	OP6	OP7	OP8			
001	Attach pocket (Automatic)	49.5	Takeuchi										
002	Turn pocket	16.9	Yari										
003	Topstitch pocket	58.3	Otani										
004	Join panel to sleeve	12.0	Kawata										
005	Topstitch sleeve panel	39.4	Ichikawa										
006	Attach sleeve with piping (Front)	26.1	Miyami										
007	Attach sleeve with piping (Back)	33.6	Haraguchi										
008	Topstitch armhole	34.1	Suzuki										
009	Topstitch armhole B collar	39.0	Akashi										
010	Sleeve to side seam	38.8	Nakano										
011	Attach cuff	28.8	Fukuda										
012	Attach collar	32.2	Tonoda										
013	Close collar	41.4	Nakanura										
014	Attach zipper	124.6	Saijyo 183	Kita 183									
015	Topstitch zipper	54.1	Ino										
		628.7	SEC										

~ FIND OUT AN IMPROVING POINT (know-how of operators) AND IMPROVEMENT ~

PHOTO



【Usage purpose】

- To arrange planning papers, to draw up an operational manual.
- To record non-defective and defective products, to record front and back views.
- Maintenance records of the facilities.
- Each line can be made by photograph and the maintenance ways of each machine is expressed. (Setup time(Changing line) can be shortened.) →

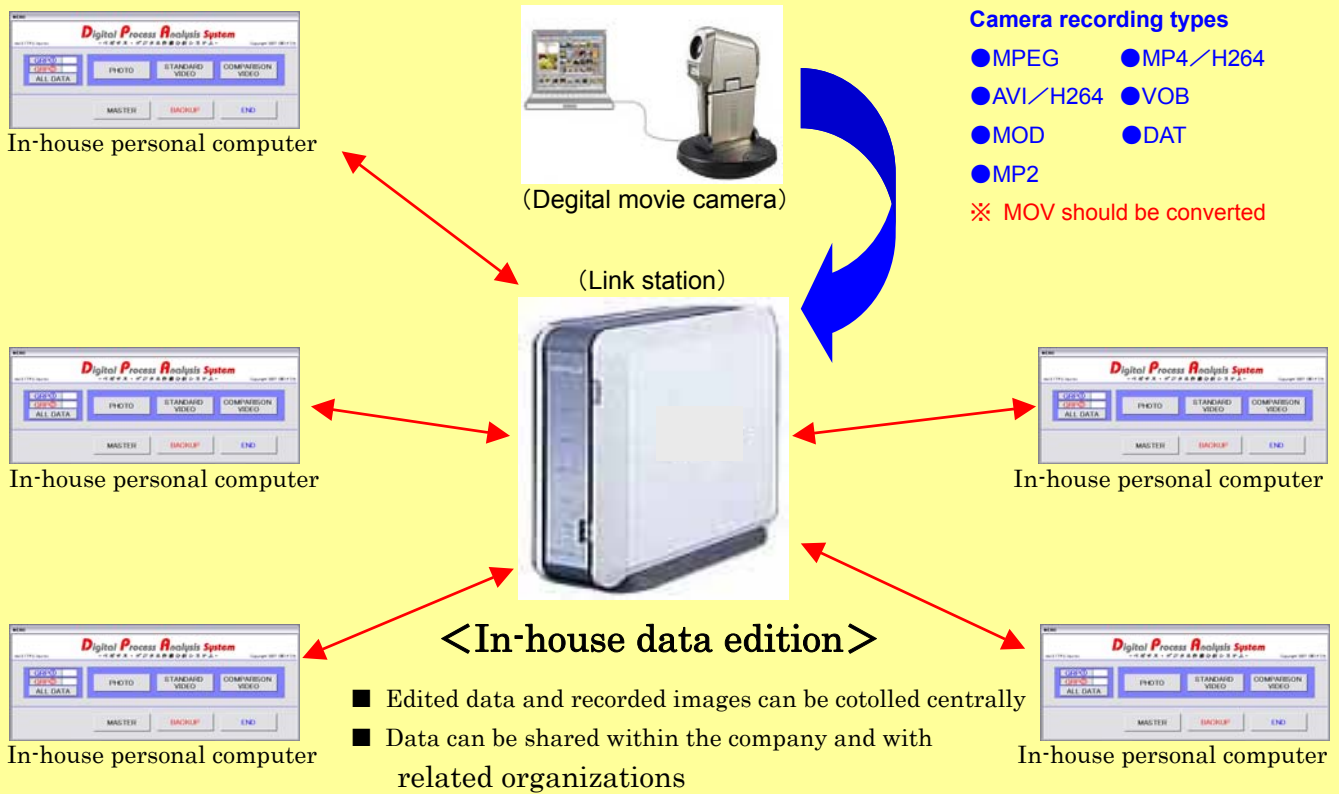
【Introduction of each function】

- Each photo can be displayed relatively on the screen
- Each photo can be enlarged on the screen
- Each edited photo can be printed out
- Where the data is stored can be “visualized” (Do you remember where the data is stored?)

NUM	P NAME	
000111	Sewing Line	
001	Sample_1	
	Sample: Front	
	Sample: Side	
002	Planning Instruction	
003	Operation_1	
	EX0214-00/00-000/0000	
	①Check Refinements on the backside of presser foot	
004	Operation_2	
	EX0214-00/00-000/0000	
	①Check the upper feed dog position	
	②Check the material as	
005	Operation_3	
	EX0214-00/00-000/0000	
	①Raise presser foot by hand	
	②Check the material as	

~MACHINE MAINTENANCE AND TECHNOLOGY WHICH IS DIFFICULT TO TELL BY MOVING IMAGES.~

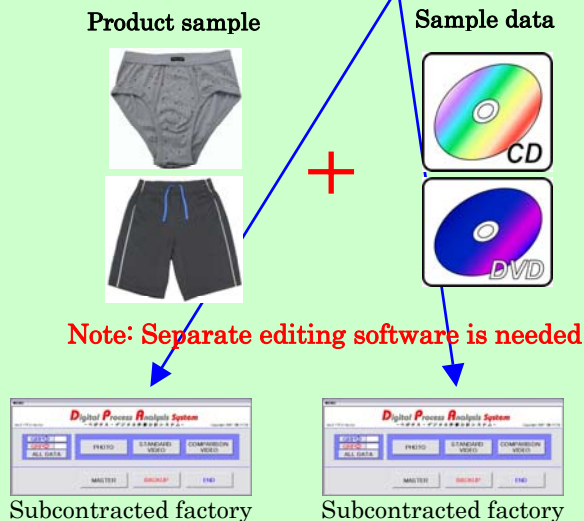
EXAMPLE IMAGE OF AN ACTUAL OPERATION OF THE DPA SYSTEM



~INFORMATION SHARING · CLARIFICATION OF WORK~

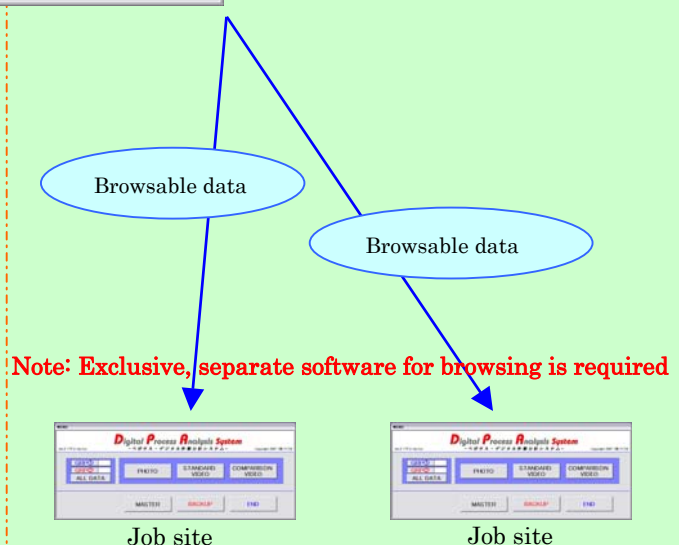
< From the headquarters to subcontracted factories >

- All factories can be controlled centrally
- Data sharing
- Through instructions can be provided (Movable instructions)



< From within the company to job sites >

- Clarification of each operation (Confirmation of each operation)
- Operator training
- Increasing awareness



Note: It is necessary to install and authenticate the software

PERSONAL COMPUTER AND CAMERA

※ Check the following items for the personal computer and the camera

1 Recommended hardware requirements

- **Corresponding OS** : Windows XP
- **CPU** : Above Pentium M or Celeron M Core 2 Duo recommended
- **HDD** : Built-in HDD more than 40 GB, External HDD 100-500GB recommended
- **Memory** : More than 512 MB 1-2 GB recommended
- **Display** : 1024 x 768, 1280 x 1024 or 1280 x 800 recommended
- **Chipset** : With the following graphic accelerators, or better
RADEON XPRESS 200 M or Intel 915GM(Express)
- **Graphic memory** : More than 64 MB
- **Digital camera** : MP4, AVI or MPEG with 640 x 480 frame

《Essential points》

■ Installation of MP4 video replay software (codec)

【Purpose】 To replay MP4 movies

Install the Ulead Photo Expolore 8.5SE

If you use another MP4 camera, the Ulead Photo Expolore 8.5SE(codec) will be available.

※ A codec is supplied with the purchased camera

■ Install Windows Office (any of the following versions, 2000, 2003 or 2007)

【Purpose】 To control all the mastered production cost, sewing machine equipment, descriptions of operations, operator's name using the Excel file.

To display photos and material on the screen, and print them out.

※ The DPA system can be operated by using other hardware with performance below requirements in description above, but some trouble may occur according to the condition of the movie.

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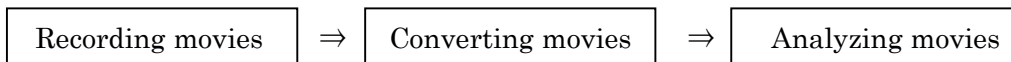
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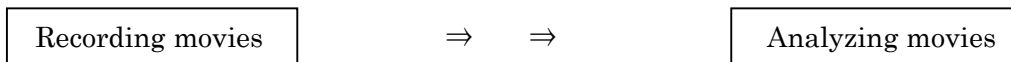
2 Notes related to the above

- If you share the data (movie) under an in-house LAN environment, 100 BASE or better is required.
 ※ It is necessary to install and authenticate the software.
- When a photo is taken, the resolution should be less than 3.2 million pixels (at 640x380)
 At higher resolutions, it takes time to display a photo on the screen.
 In addition, large capacity is required to save photos.
- To replay movies more smoothly, shut down resident software temporarily, such as antivirus software. Adjust resident software as required.
- Selecting a digital camera
 Movies should be recorded using the MPEG or MP4/AVI protocols.
 It is important to analyze movies recorded for the purpose of process technology. Storage and/or job analysis, etc., without conversion.
 In addition, in regard to the recording media employed, memory cards are better than Videotape type.

• Videotape type recording media :



• Memory card type recording media :



(The operation time will be reduced)

『 Recommendation camera 』



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