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**بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ**  
**سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ**  
**الْعَلِيمُ الْحَكِيمُ**  
**صَدَقَ اللَّهُ الْعَظِيمُ**  
(آية ٣٢ - البقره)

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# Greetings

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- Thank you, Mr. Chairman, and Assalam Alykom.
- I'd like, first of all, **thanks** the organizers of this meeting for inviting me here this day. It is also a particular pleasure for me to play my 1<sup>st</sup> visit to this beautiful city.

**ASSESSMENT OF FABRIC TAILOR ABILITY  
WITH INNOVATIVE ON-LINE WIRELESS  
ALERTING SYSTEM**

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# INTRODUCTION

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**E-Services** applications have  become essential in the industry during the 21st century. Computerized monitoring in *Textile Industry*, is becoming one of the very essential issues these days.

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All factories are in **vital need** □  
to have a reliable **production  
monitoring system**, depending on  
their level.

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# Objectives:

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This paper discusses the **impact** of the use of

**e-services** on the development of **fabric**   
**tailor ability assessment** , i.e. (   
**voice of process** & **voice of**  
**consumer** ) in **textile**   
**industry** .

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# **Definition, "Fabric Tailor ability".**

*Fabric Tailor ability means , tailoring without troubles and ,it consists of :* □

Fabric spreading , as a function of , Process ability □  
Modulus,

Fabric separation as a function of , Saw ability □  
Modulus ,

Fabric joining as a function of, Sew ability □  
Modulus □

, and □

Fabric shaping as a function of Formability Modulus . □

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# Fabric Tailor ability Assessment

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- 1- Kawabata Evaluation System for Fabrics □  
( KES-F) ,
  - 2- Fabric Assurance by Simple Test (FAST) □
  - 3- L & M Sew ability Tester (L&M),
  - 4-Fabric Quality & Sew ability Finger , □  
Print(Hadidy,2000)
  - 5-Fabric Sew ability Tester (FST),- (Hadidy □  
,2006) .
-

## That methods are:

- They are tedious and lengthy.
- They can not be used to assess overall fabric tailor ability.
- Non can give reliable information about fabric tailor ability as eService tool .

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Thus, it is obvious that a rapid and simple method for assessing fabric tailor ability as eService tool is badly needed.

The present work was undertaken to fill this gap.

# **Variables ( Xis ) :**

1-M1, Raw Materials ( Cotton , Wool, Silk, Flax , Man-Made,.....

2-M2, Machines ( Speed , Types , Settings , .....

3- M3, Man-Power ( Trainings , Skill , Qualifications

4-M4, Management ,

5- M5, Measurements ( Subjective Evaluation , Objective Measurements ,...,and

6-M6 , Methods.

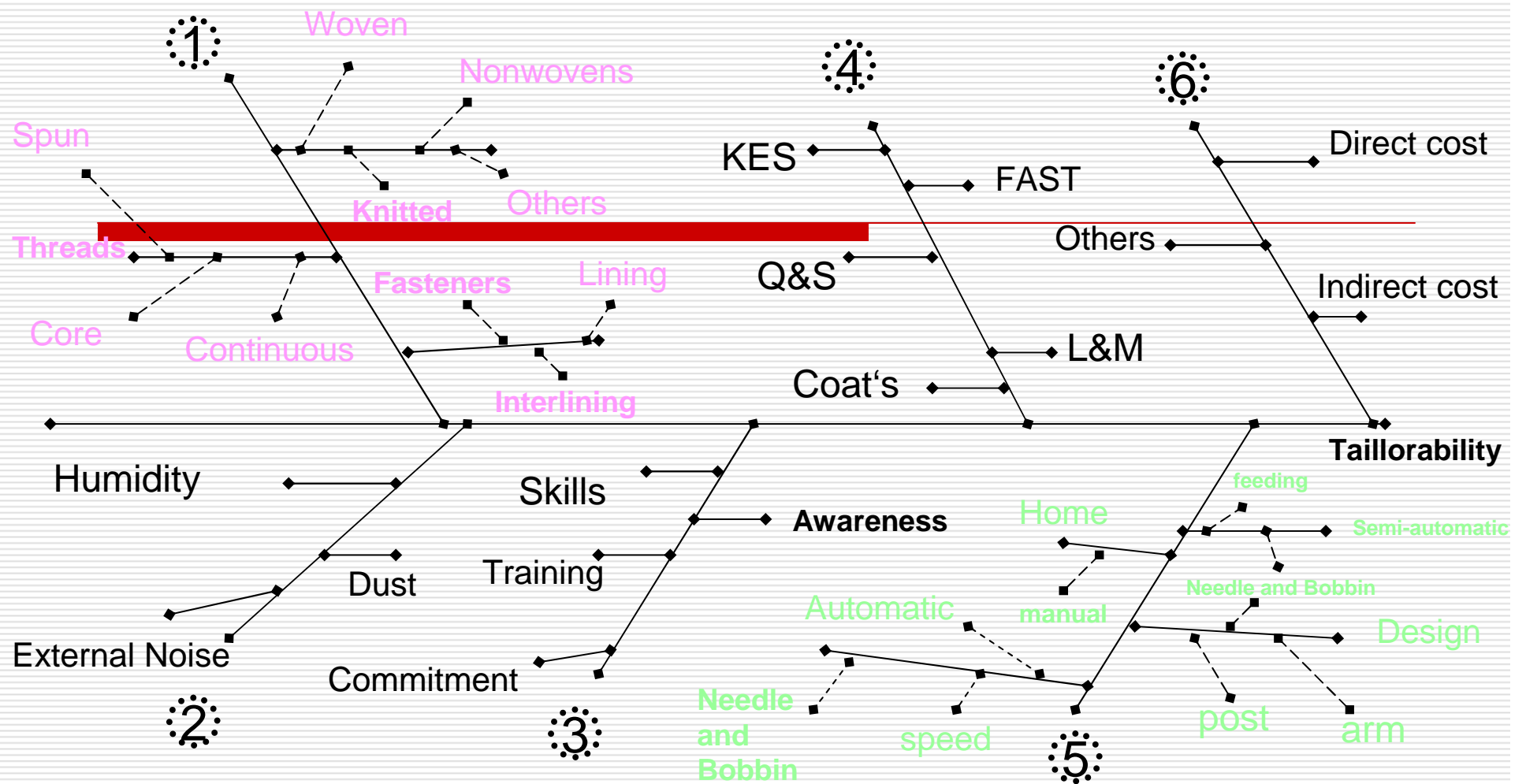
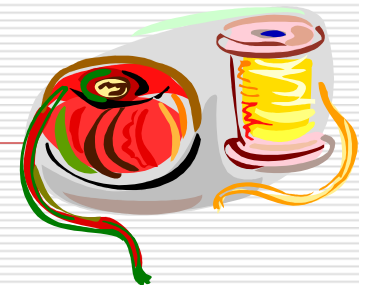


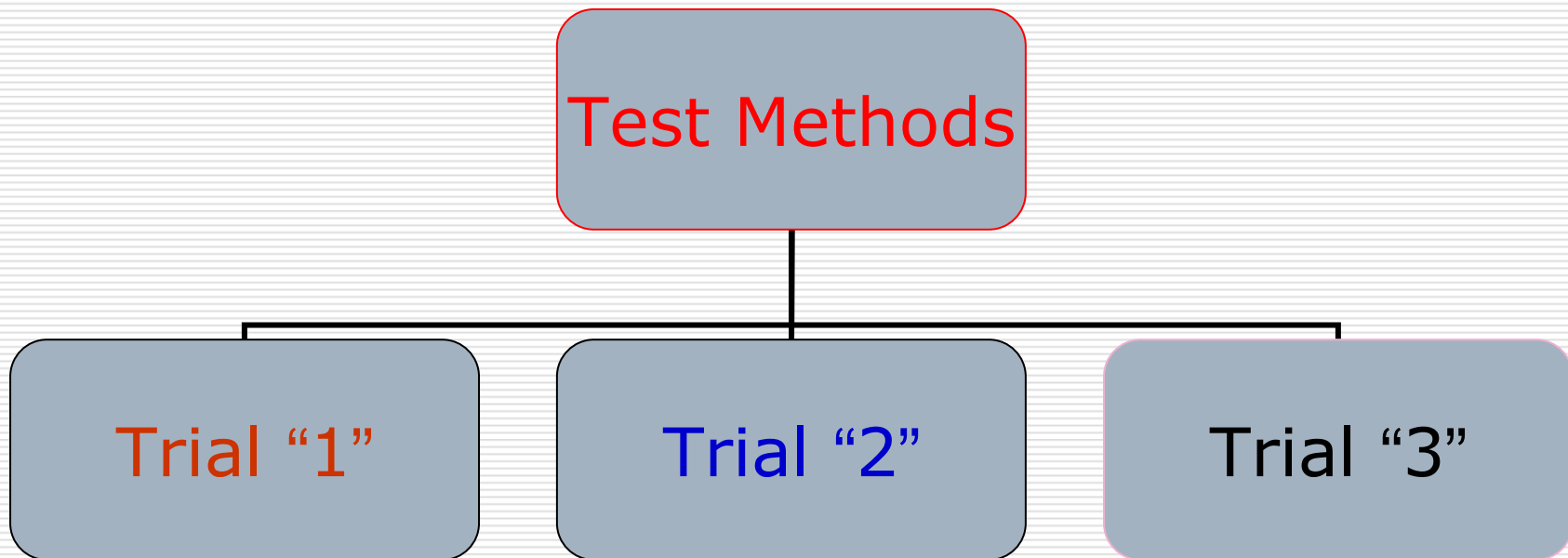
Fig.1, Tailorability is a Function of six variables(6M) .



# Experimental Work

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## Instrumentation



# Trial No. I :

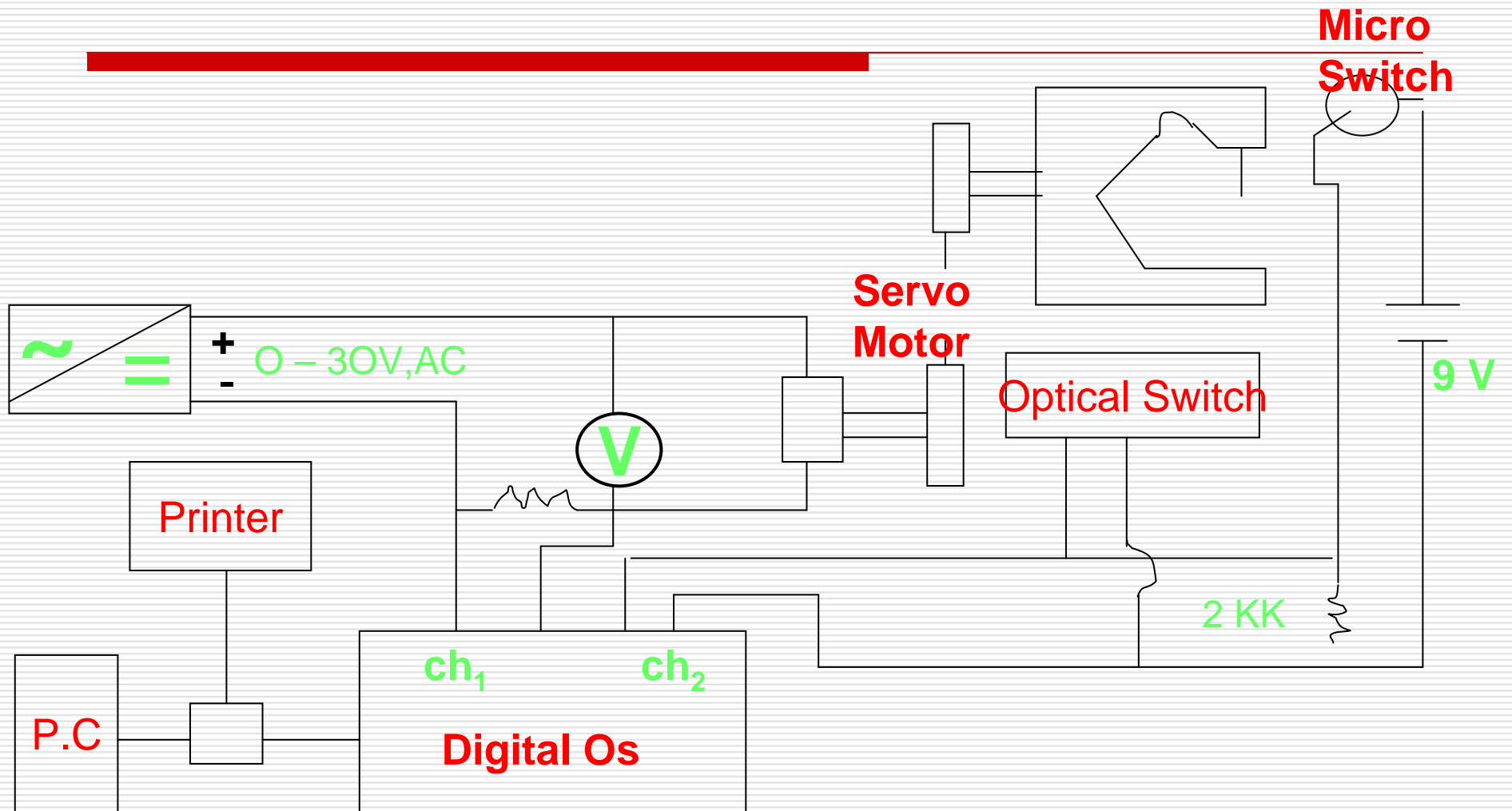
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Computer Based Measuring System ,   
i.e., Fabric Tailor ability -Unite “ I “.

It is an indirect method based on   
measuring the electric power  
consumption due to fabric resistance  
to sewing needle penetration “  
cN/tex” .

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# ( Fabric Tailorability - Unit I ) :



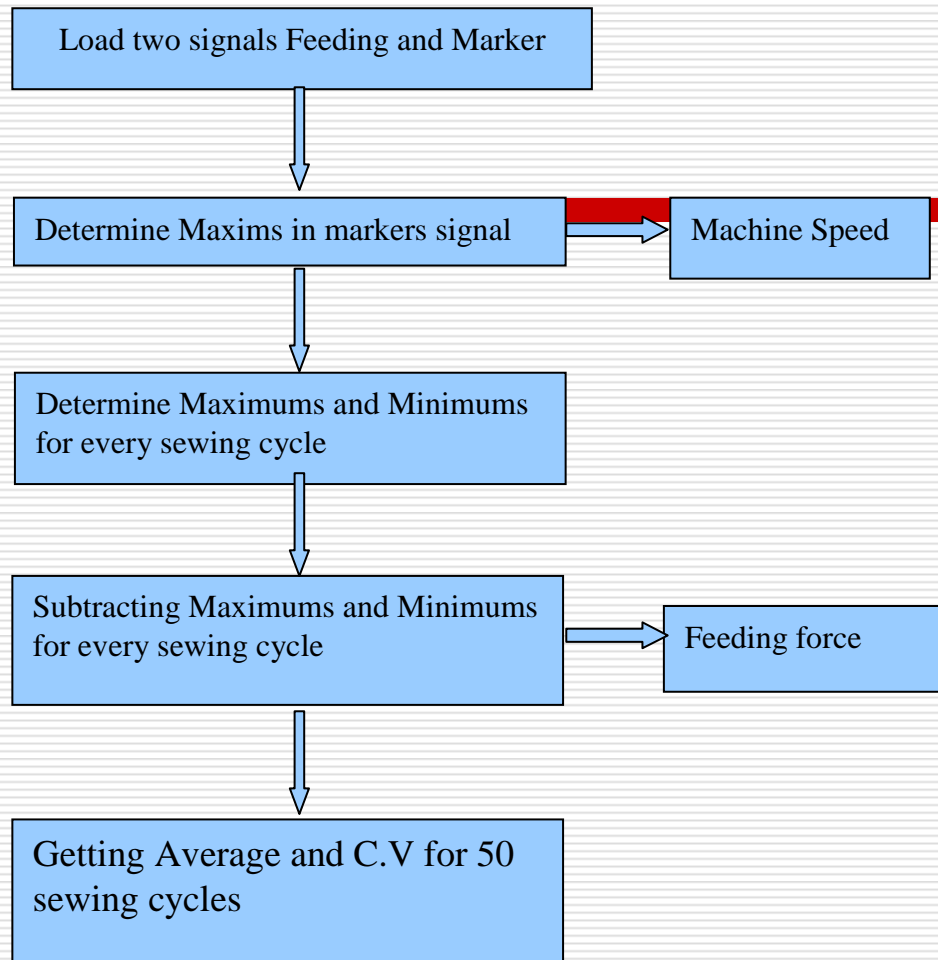
# Results

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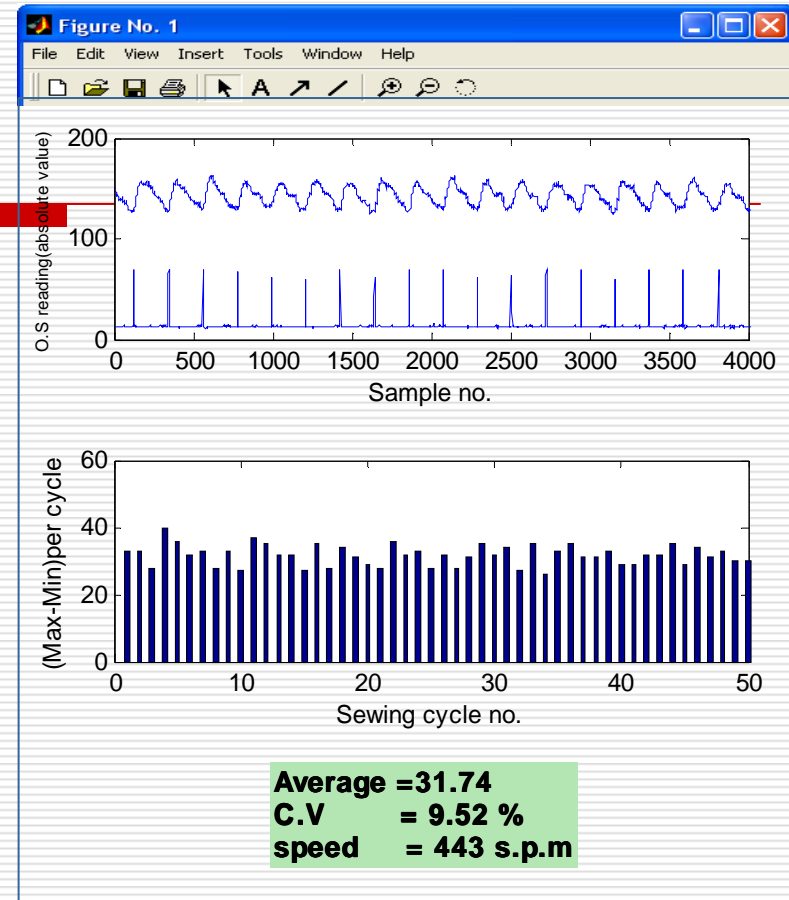
The signal received from the “PC”-   
Unite I, will be directed to the Lab   
VIEW software , which has a virtual   
instrument (VI) programmed to send   
the resulted signal to the relevant   
stakeholder (Unite “ II” ), either by “   
E-mail or by “ SMS “ .

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## Analysis of out put signal :-

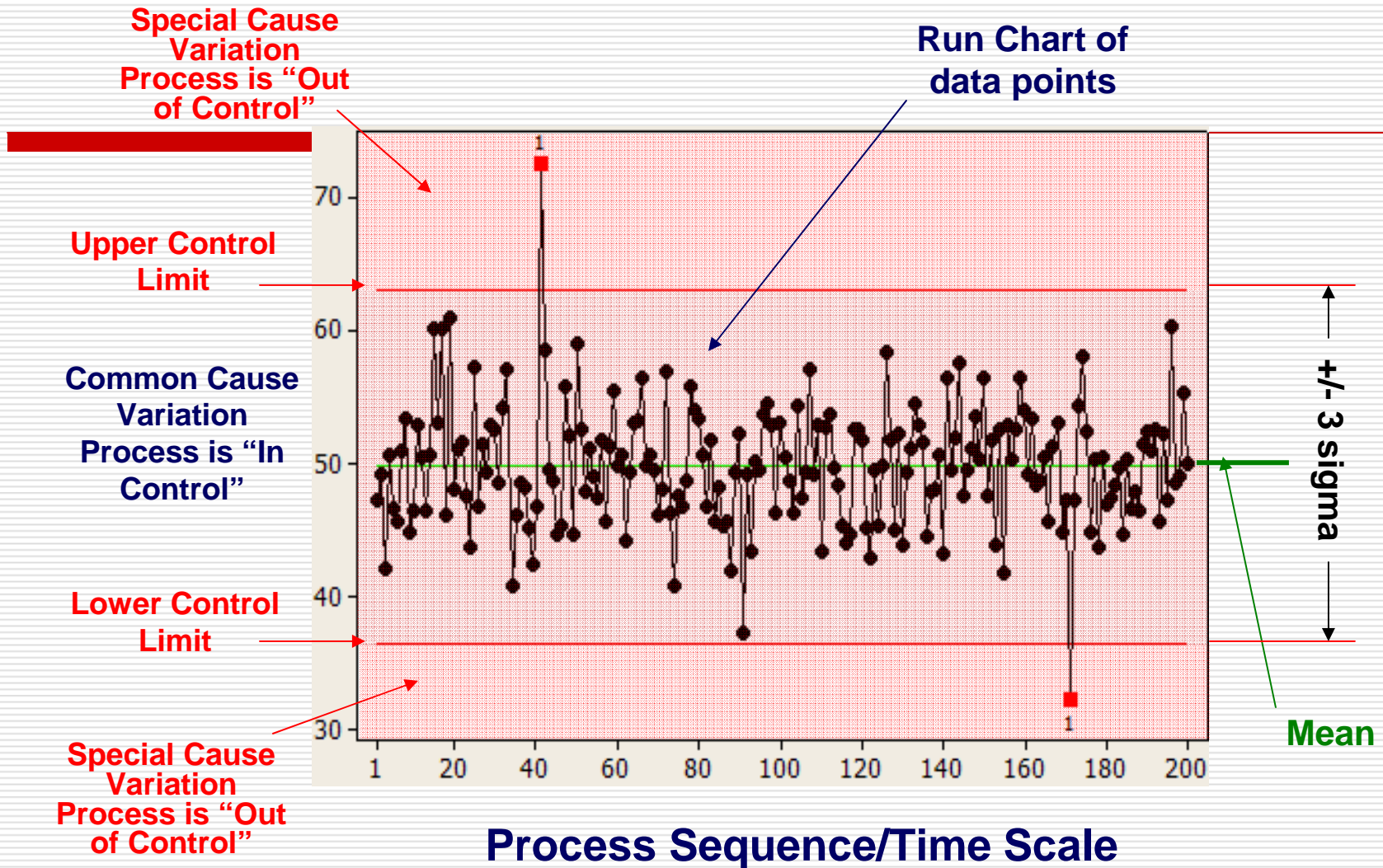


**Flow chart for  
program steps**



**The out put of matlab  
program**

# Control Chart



Trial No. “ 2 “ :

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Alerting System ( Production Lines

Supervisor “ PLS” ) . **Fabric**

**Tailor ability Device ,**

**Unite II**

Example of a Two –Element Complex   
Process System.

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# Suggested Design

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Suggested Design Consists of Two   
Units :

Fabric Tailor ability , Unit “ I “( FST) ,

Fabric Tailor ability , Unite “ II”(Lab   
VIEW software programming).

# Utilization of Lab VIEW in Fabric Tailor ability Assessment

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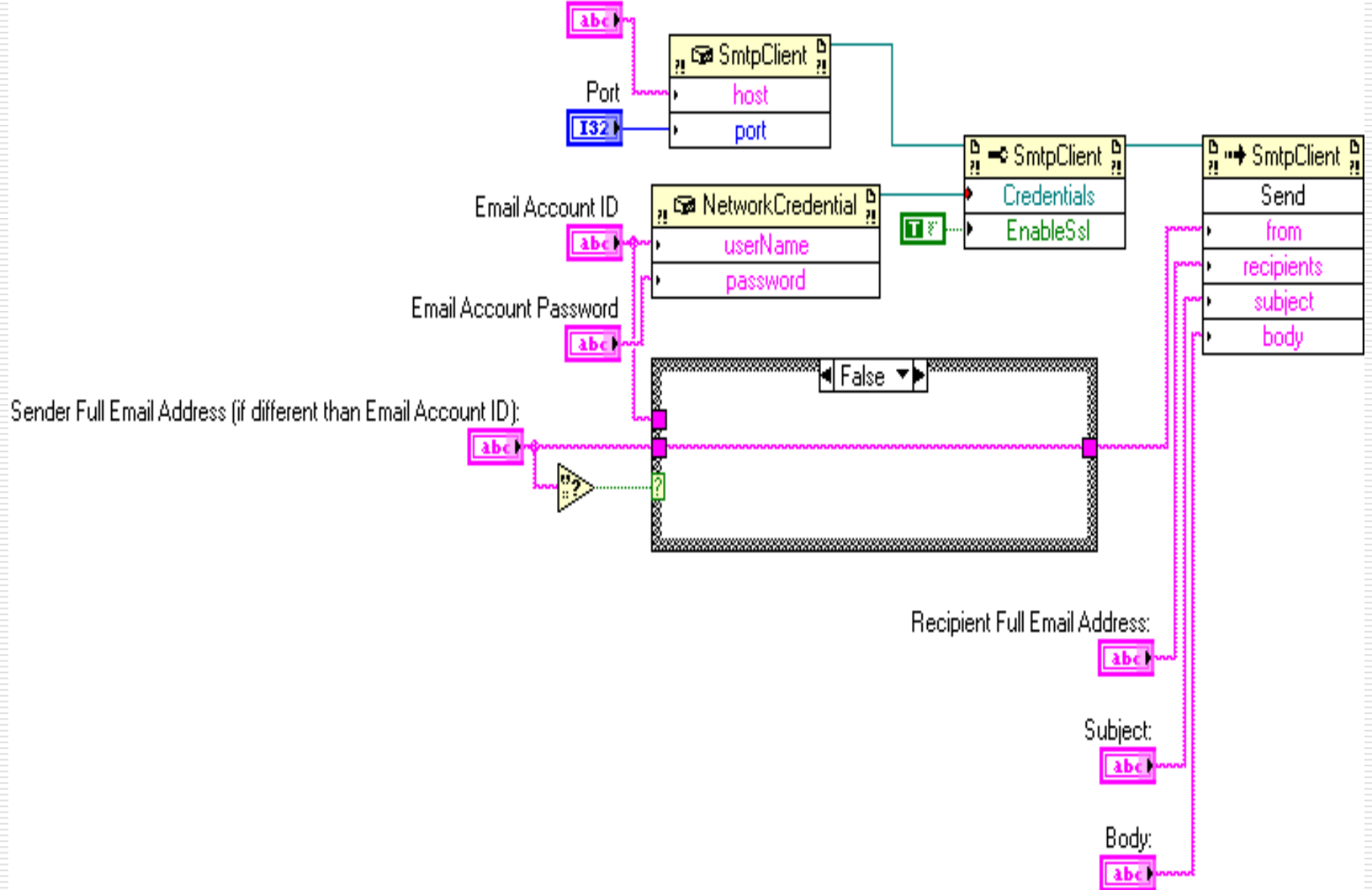
Lab VIEW is commonly used for data acquisition , instrument control , and industrial automation . □

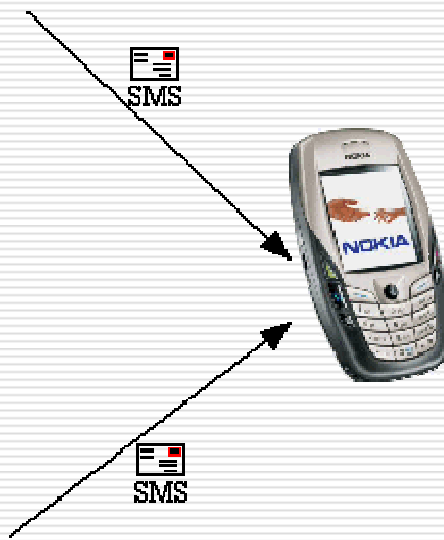
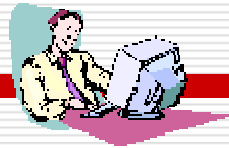
Dataflow programming , as well as Graphical programming are shown in the following Figs. □

Some modification are also required in the math script of the Lab View (Virtual Instruments) VI. □

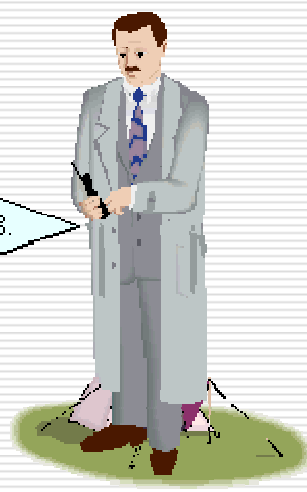


SMTP Outgoing Mail Server





Forward to 88888888



Trial No. “ 3 “ :

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**Under Investigation** .

Monitoring Menu for **“ 20 “** machines , is given.

Each machine is represented by **Five** analog values ,   
1<sup>st</sup> for fabric process ability modulus , 2<sup>nd</sup> for fabric saw   
ability modulus , 3<sup>rd</sup> for fabric sew ability modulus , 4<sup>th</sup>  
for fabric formability modulus , and 6<sup>th</sup> for

**overall fabric tailor ability**   
**value.**

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## *The proposed interfacing block diagram , consists of :*

### 1- The Programmable Logic Controller "PLC" :

The " PLC" will receive the output critical values out of fabric tailor ability indexes ( Unite I ) , from 20 sewing machines – model.

### 2-Human Machine Interface "HMI" :

The critical values , addressable mobile phone number , delay time , no. of points ( readings) .

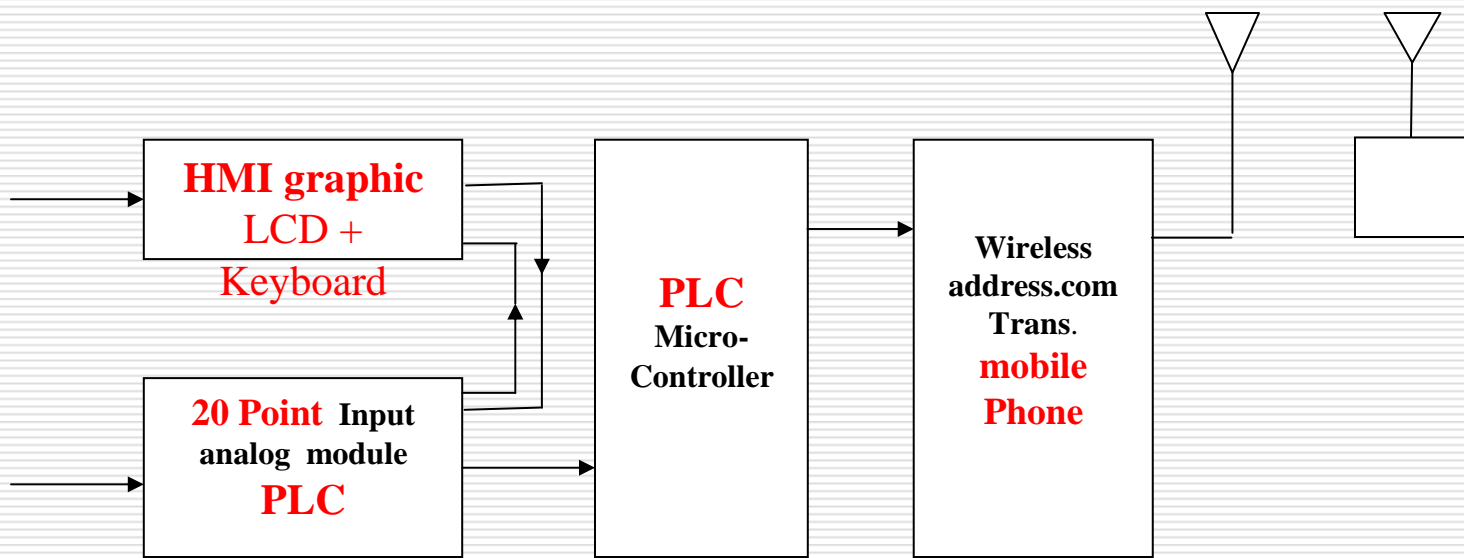
### 3-"PIC " Micro – Controller :

It receives the output from the "PLC" will send a message condition both.:

the phone number ,

the machine number

also of output alarm signal. 1-



# **CONCLUSION** □

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The **eService technique** for the □  
condition monitoring of fabric  
tailor ability by making use of  
**fabric tailor ability device ( unite I  
+ unit II )** is proposed . The linear  
and nonlinear parameters were  
obtained by the algorithm  
developed and the same is being  
watched for their smooth running.

I will Finish There.

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***THANK YOU***

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