



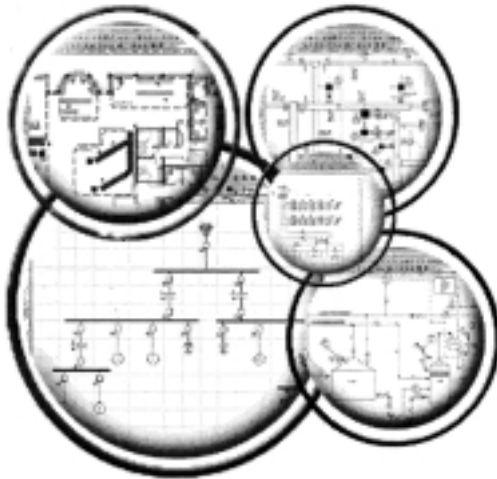
, Package 100, 300, 500,  
1000, 2000, 50000+ BUS

가 ,  
PDF 가

<http://www.edsa.com>



1 EDSA Technical 2000



2

1 EDSA 가

EDSA 가
ANSI/IEEE AC Short Circuit - 1, 3 Phase
AC Load Flow - 1, 3 Phase
Motor Starting
Device Coordination - 1, 3 Phase
Arcing Faults
IEC 909 Short Circuit
Reactor Sizing
Panel Schedules
Transformer Sizing - Load Profile Method
Wire Sizing & Conduit Sizing
Bare Wire Sizing
Power Factor Correction
Transmission Line Constants
Short Line Parameters
Generator Sizing
Motor Torque & Performance
Cable Ampacity N-M and IEC
Ground Grid Design
Unbalanced Load Flow
Load Forecasting
Cable Pulling in 3D
Cable Tray Analysis
Shielding Effectiveness
Transmission Line Sag & Tension
Motor Generator Parameters Est
AC Load Flow with DC Lines
Harmonics Analysis
Transient Stability
AC Short Circuit - IEC 363
Active & Reactive Optimal Power Flow
AC Voltage Profile
AC/DC Load Flow
DC Short Circuit
Battery Sizing
Distribution Reliability Analysis
Substation Reliability Analysis
Block Based Reliability Analysis
EMTAP
Capacitor
Robotics Welders

## 2.2 EMTAP

BPA(Bonneville



Power Administration) EMTP  
(Electromagnetic Transient Program)

EMTP

PSS/E

가 SSR(Subsynchronous Resonance)

4000, 12000, 50000 BUS

가 EMTP

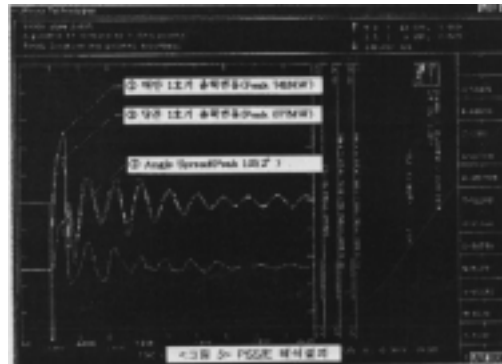
PSS/E PTI 1976

2 가 EMTP

가가  
<http://www.pti-us.com>

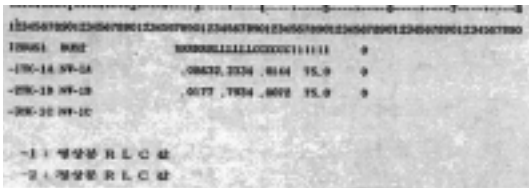
2 EMTP 가

SSR	



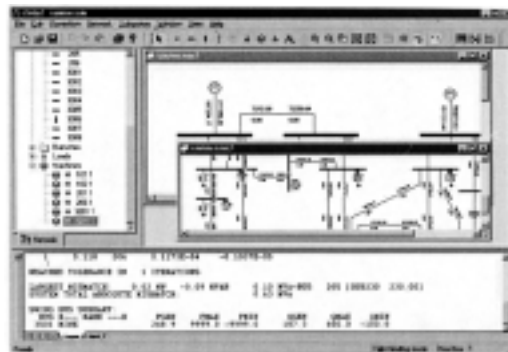
4 PSS/E

[http://www.keri.re.kr/~keug/index\\_k.html](http://www.keri.re.kr/~keug/index_k.html)



3 EMT

2.3 PSS/E



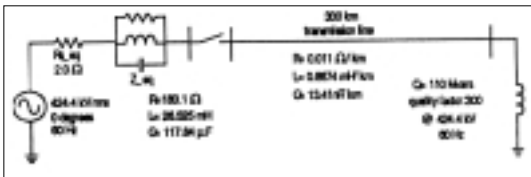
5 PSS/E BETA Version

## 2.4 Power System Blockset with Matlab

### Power System Blockset

Matlab 5.2  
 Version 가  
 Matlab Version Matlab 6.1 Simulink  
 4.1  
 Power System Blockset  
 Simulink Matlab

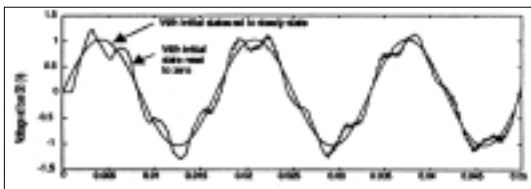
<http://www.mathworks.com>



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7



8

Tool Matlab

가 Mathematica, Maple

## 2.5 CYME

CYME  
 3 9 Modules

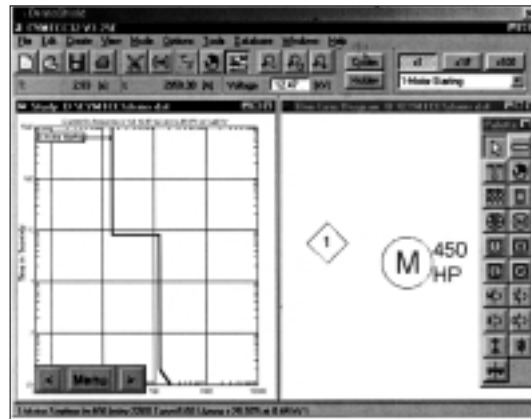
9

, 가 , ,

<http://www.cyme.com>

3 CYME

PSAF-FLOW	Power Flow
PSAF-FAULT	Short Circuit
PSAF-LINE	One-Line Diagram
CYMDIST	Distribution Primary Analysis
CYMTCC	Protective Device Coordination
CYMGRD	Substation Grounding
CYMHARMO	Harmonic Analysis
CYMSTAB	Transient Stability
CYMCYP	Cable Ampacity Calculation



9 CYMTCC Demo

## 2.6 ETAP

OTI  
 Modules

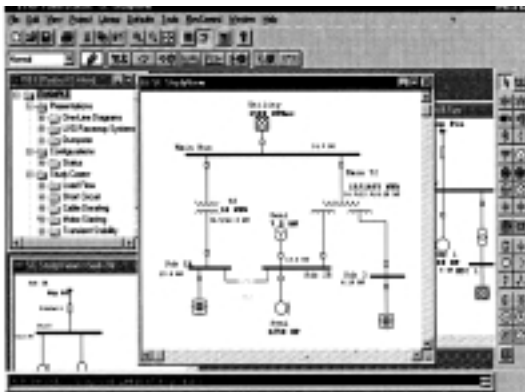
ETAP  
 , MODULE



Class, Millennium  
 가  
 , ETAP Workshop  
 , Hardware Lock Key가  
 가  
<http://www.etap.com>

4 ETAP MODULE

MODULES	
SHORT-CIRCUIT	CABLE PULLING
LOAD FLOW	GROUND GRID
PANEL SCHEDULE	UNIT TRANSFORMER SIZING
MOTOR-STARTING	DC SYSTEM
UNDERGROUND SYSTEM	OPTIMAL POWER FLOW
TRANSIENT STABILITY	RELIABILITY ANALYSIS
PARAMETER ESTIMATION	GENERATOR START-UP
HARMONIC ANALYSIS	POWER PLOT



10 ETAP

2.7 SKM

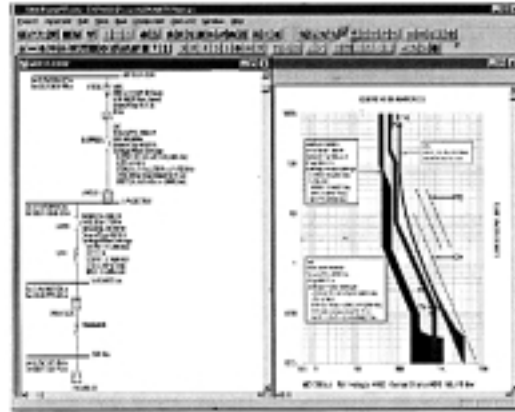
SKM(Power Tools for Windows)

5 Study module  
 , Hardware Lock Key가  
 가  
 가

<http://www.skm.com>

5 SKM

DAPPER	
CAPTOR	
HI-WAVE	
I'SIM	
TMS	
A_FAULT	ANSI
IEC_FAULT	IEC



11 SKM

2.8 PSCAD/EMTDC

EMTDC Program Electromagnetic  
 Transient DC analysis program  
 Manitoba HVDC Research  
 Center

Software , EMTD  
 가 Dommel .

HVDC DC  
 DC AC , ,

6

가

EMTDC Subroutine Library Fortran 77  
 , PSCAD Window  
 Manager UNIX Workstaion .

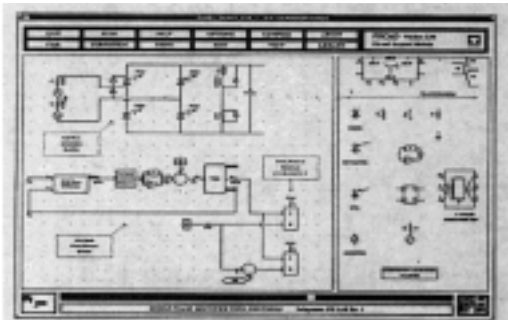
(RTDS)

4

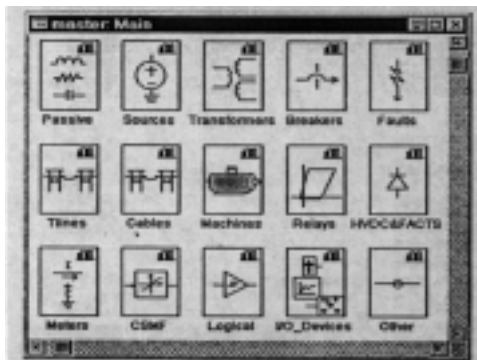
<http://www.hvdc.ca>

6 EMTDC 가

EMTDC 가	
	CABLE
DC	
FACT	
Torsional Effect,	
Static Compensations	Harmonic Interaction



12 EMTDC



13 : EMTDC

### 3. EDSA Technical 2000

3.1

EDSA Technical 2000  
 15

AutoCAD

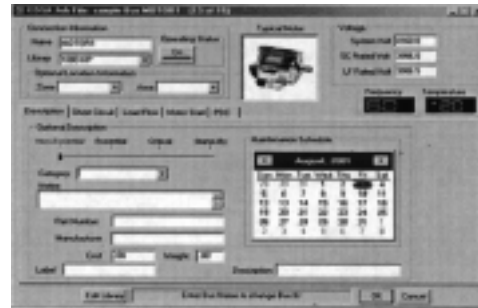
AutoCAD

가  
 VISIO,

가  
 가

EDSA Technical 2000

, source,  
 , PSS



14 Data Library



15 AC Fault Calculation