

# NC Watch Guide

v1.2

NC Watch

OFFLINE RUN STOP ALARM MANUAL

00001	NC_MACHINE1	00001	NC_MACHINE2	00001	NC_MACHINE3	00001	NC_MACHINE4
0%	Start 15:36    Remain 00:00						
	Part Count        190						
	O0001		O0001		O0001		O0001
0%	NC_MACHINES5	0%	NC_MACHINE6	0%	NC_MACHINE7		
	Start 15:36    Remain 00:00		Start 15:36    Remain 00:00		Start 15:36    Remain 00:00		
	Part Count        190		Part Count        190		Part Count        190		
O0001	O0001	O0001	O0001				

# Contents

---

NC Watch 개요

시스템 구성

네트워크 구성

User Interface & Functions

Summary & Report

System Log

Configuration

Database Table

NC Watch Web

---

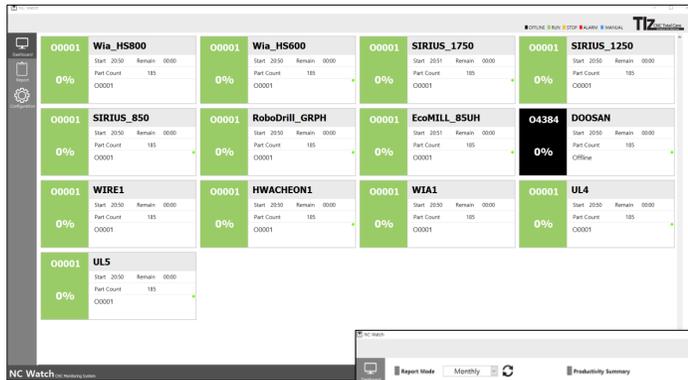
# NC Watch

System Overview

## • Overview

- NC Watch는 여러 기종의 NC로부터 가공 데이터 수집 가능
- 가공 현황, 일간/주간/월간 가동률, 수가공시간 등의 데이터를 표시
- SMS 전송 기능(알람, 가공 완료 등)
- 일간/주간/월간 데이터의 그래프화

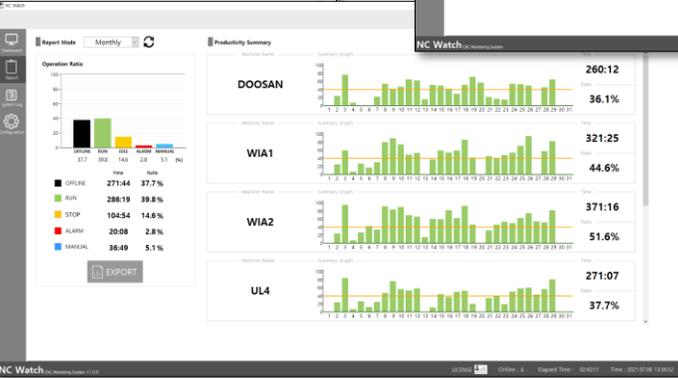
## • 가공 현황



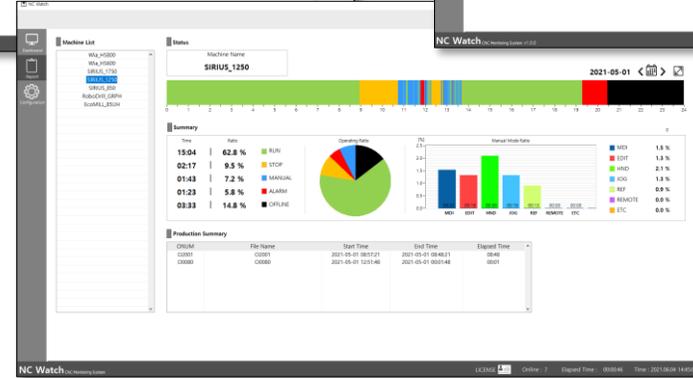
## • 일간 데이터 통계



## • 주간 데이터 통계



## • 월간 데이터 통계



## • NC 상세 정보

## • 주요 기능

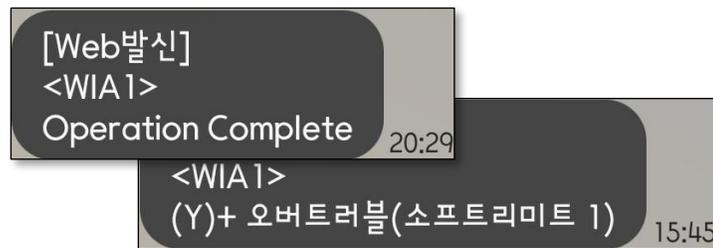
- 실시간 가공 상태 표시
- 실시간 기계 조작반의 세부 상황 표시(Mode, Feed, Spindle 등)
- 가공 시간 예측
- 보고서 출력 및 열람(일간/주간/월간 단위 가동률 Excel 출력)

00001	<b>DOOSAN</b>	
	Start 20:11	Remain 00:00
	Part Count	184
	O0001	

실시간 가공 상태

## • 보조 기능

- 메시지 전송 기능(SMS)
- 메시지 전송 조건 설정



메시지 전송 기능(SMS)

Message Setup Enable

- Operation complete
- Alarm occurs during operation
- All alarms occur
- Do not send SMS (Night) : 18 h ~ 8 h
- Do not send SMS (Day) : 8 h ~ 18 h

메시지 전송 조건 설정

# NC Watch 시스템 구성

## CNC 장비



공작기계 상태  
가공 현황 표시  
데이터 집계

## 정보 집계 및 저장

00001	Wia_HS800	00001	Wia_HS600	00001	SIRIUS_1750	00001	SIRIUS_1250
0%	0%	0%	0%	0%	0%	0%	0%
00001	SIRIUS_850	00001	RoboDrill_GRP	00001	EcoMILL_85UH	04384	DOOSAN
0%	0%	0%	0%	0%	0%	0%	0%
00001	WIRE1	00001	HWACHEON1	00001	WIA1	00001	UL4
0%	0%	0%	0%	0%	0%	0%	0%
00001	ULS						

NC Watch

파일 기반 저장

Save to .csv File

## 정보 표시 및 활용

가공예상시간  
진행상황 표시



통계, 분석

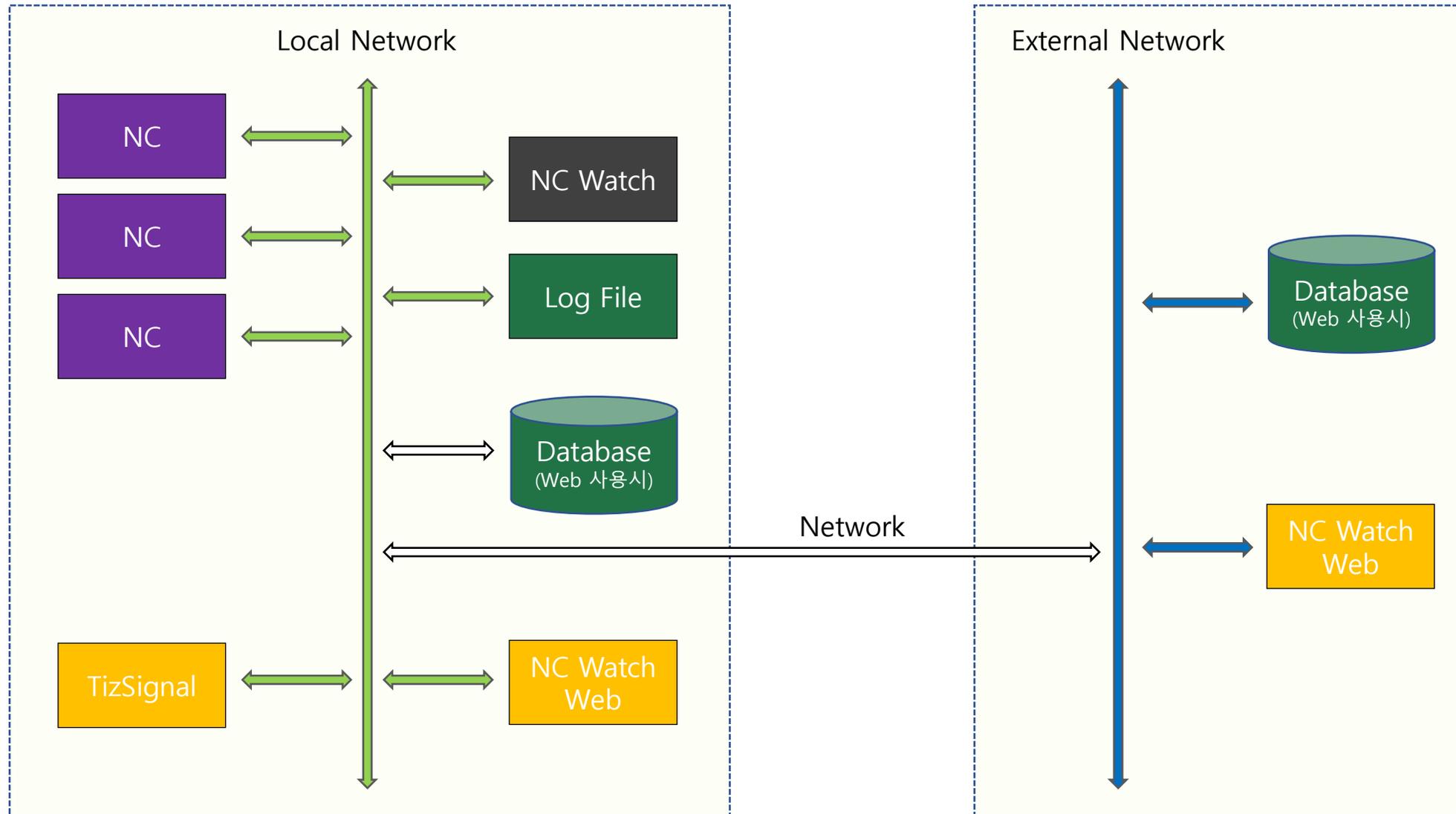
NC Watch - 일/주/월 데이터

- NC Watch

- 여러 종류의 NC로 부터 가공데이터를 수집(Fanuc, Siemens, Mitsubishi, Sodick, Okuma, Heidenhain etc)
- .csv 파일 기반의 시스템이며, 차후 업데이트 될 Web 버전을 위해 Database 서버 구축 및 연계 가능(SQL)
- NC Watch는 다양한 연결방식을 통해 NC와 연결하며 데이터 동시집계를 지원함

제조사	연결방식
FANUC	FOCAS
MITSUBISHI	EZSocketNC
SODICK	MTConnect
OKUMA	MTConnect
SIEMENS	OPC-UA
HEIDENHAIN	LSV2
EXCETEK	OPC-UA
기타 구형 컨트롤러	MODBUS(Ethernet I/O Module)

# NC Watch 네트워크 구성

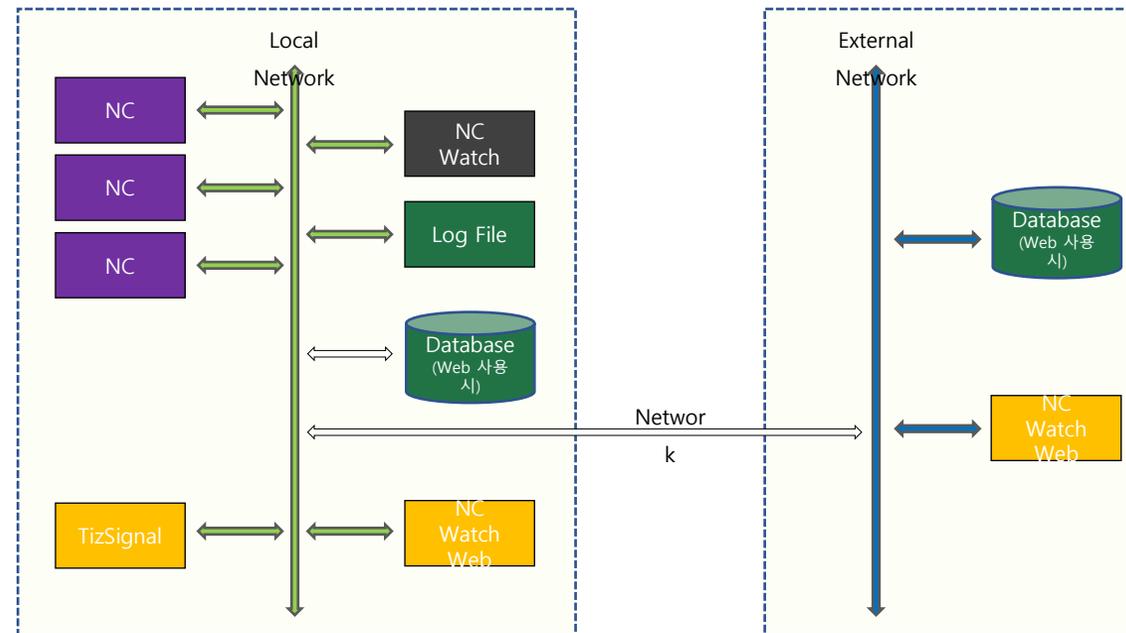


- NC Watch

- NC Watch와 공작기계의 연결은 TCP/IP 유,무선 Network을 이용하여 하나의 Local Network로 구성되어야 함

- Database

- NC Watch Web Client와 연동을 위해 NC Watch용 표준 Server를 사용하며 Host PC 내에 설치함
- 외부 Network에 설치되어 운용되는 SQL Server도 지원함

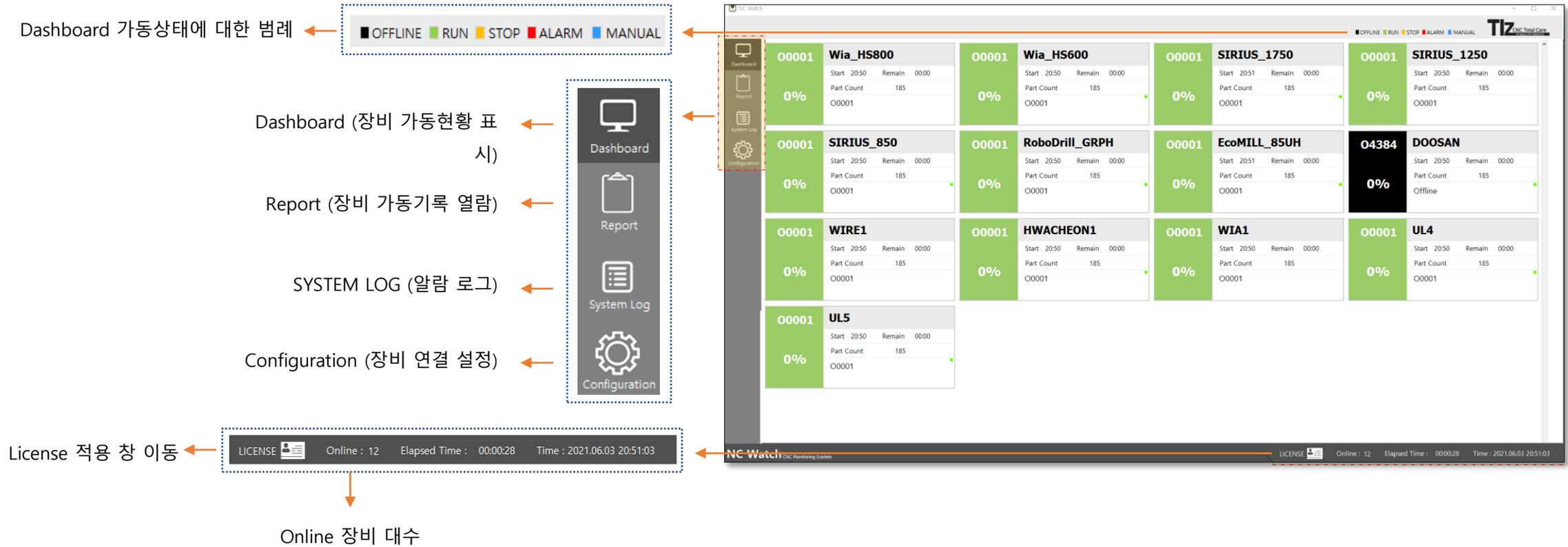


# NC Watch

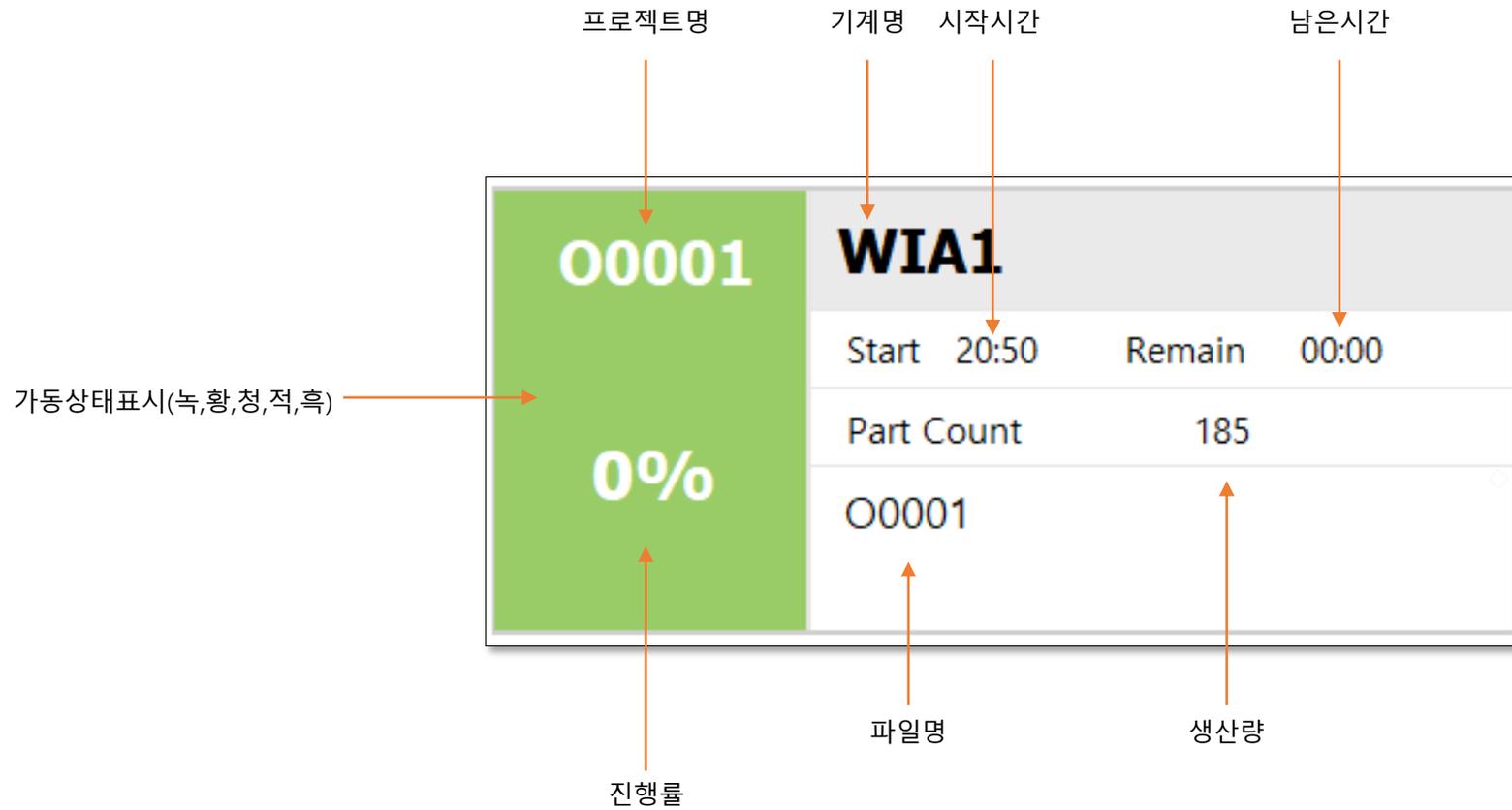
User Interface & Functions

# NC Watch - Dashboard Interface

- 메인 화면



- 장비 가동 현황 표시부



- 기계 가동 상태

가공 중 : RUN

<b>00001</b>	<b>WIA1</b>
	Start 20:50    Remain 00:00
	Part Count        185
<b>0%</b>	O0001

수가공 중 : MDI, JOG, EDIT 등

<b>00000</b>	<b>SIRIUS_850</b>
	Start 12:29    Remain 00:00
	Part Count        189
<b>0%</b>	O0000

가공 정지 : PAUSE, STOP, RESET

<b>00001</b>	<b>SIRIUS_1750</b>
	Start 12:28    Remain 00:00
	Part Count        189
<b>0%</b>	O0001

알람 정지 : ALARM

<b>00001</b>	<b>SIRIUS_1250</b>
	Start 12:28    Remain 00:00
	Part Count        189
<b>0%</b>	OVER TRAVEL : +Y(소프트 리미트)

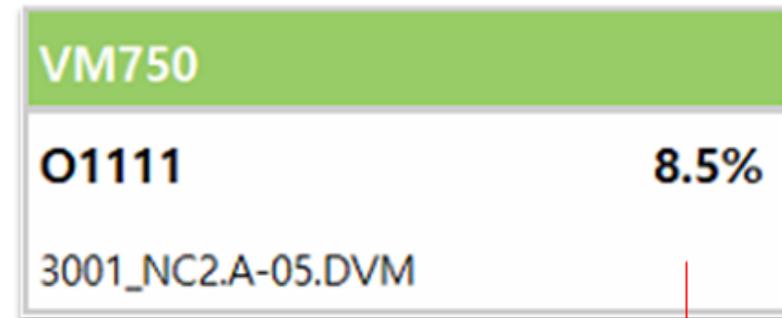
오프라인 : OFFLINE

<b>04384</b>	<b>DOOSAN</b>
	Start 20:50    Remain 00:00
	Part Count        185
<b>0%</b>	Offline

- 보기 방식 변경



보기 방식 Full View



보기 방식 Simple View

# NC Watch – Detail View Interface

- 기계 상세 정보 확인(Detail View)
  - 사용자가 선택한 기계의 가동정보를 상세히 확인

The screenshot displays the NC Watch software interface for machine HWACHEON1. The interface is divided into several sections:

- Machine List:** A vertical list on the left side showing machine names: DOOSAN, WIA1, WIA2, UL4, UL5, HWACHEON1 (highlighted), and HWACHEON2.
- Status:** A section at the top right showing the machine name 'HWACHEON1' and an 'ALARM' field. Below this is a horizontal bar chart representing the machine's status over a 24-hour period, with segments for OFFLINE (black), RUN (green), STOP (yellow), ALARM (red), and MANUAL (blue).
- Summary:** A table showing cumulative time and ratios for different states:
 

Time	Ratio	State
15:04	62.8 %	RUN
02:17	9.5 %	STOP
01:43	7.2 %	MANUAL
01:23	5.8 %	ALARM
03:33	14.8 %	OFFLINE

 A pie chart titled 'Operating Ratio' visualizes these data points.
- Manual Mode Ratio:** A line graph showing the percentage of time spent in various manual modes over a 7-day period.
 

Mode	00:00	00:00	00:00	00:00	00:00	00:00	00:00
MDI	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
EDIT	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
HND	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
JOG	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
REF	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
REMOTE	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
ETC	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
- Detail Data:** A section on the right providing specific machine parameters:
  - FILE: O0001
  - STATUS: START (RUN MODE), MEM
  - ONUM: O0001
  - PROGRESS: START 14:40, REMAIN 00:00, PERCENT 3.5 %, BLOCK NUM 0 / 2233
  - POSITION: WCS 54, AXIS X -34.601, AXIS Y 39.400, AXIS Z -108.181
  - MISCELLANEOUS: FEED 40, SPINDLE 0, TOOL NUM 1, PART COUNT 240

The bottom status bar shows 'NC Watch v1.0.0.43', 'View Mode: Simple View', 'LICENSE', 'Online: 5', 'Elapsed Time: 00:16:24', and 'Time: 2021.07.06 14:40:10'.

# NC Watch – Detail View Interface

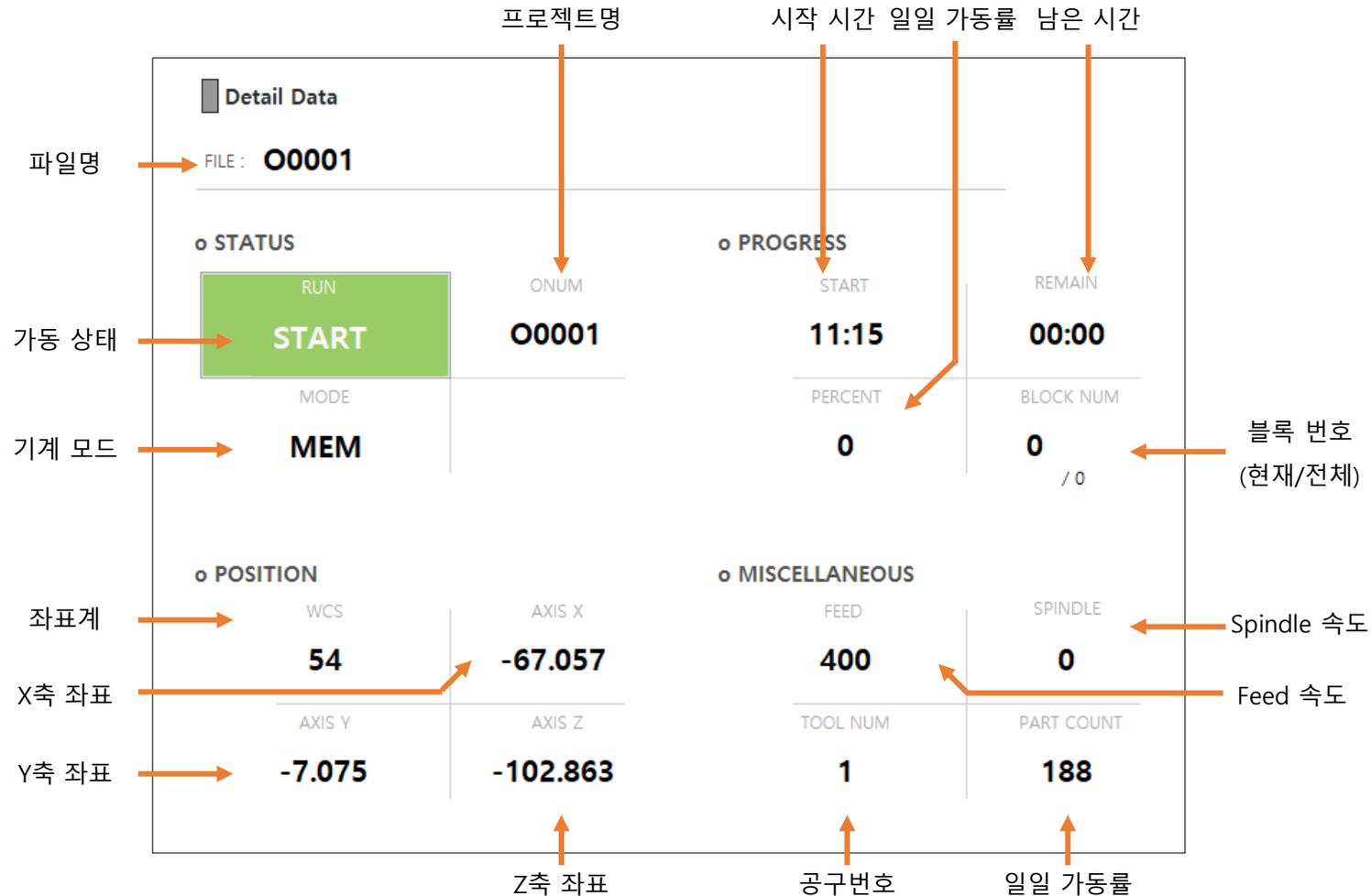
- 기계 상세 정보 확인(Detail View)
  - 사용자가 선택한 기계의 가동정보를 상세히 확인

The screenshot displays the NC Watch software interface with the following components:

- Machine List (기계 선택 창):** A list of machines including DOOSAN, WIA1, WIA2, UL4, UL5, HWACHEON1 (selected), and HWACHEON2.
- Status (기계명):** Shows the selected machine name as HWACHEON1 and the current alarm status as ALARM.
- Alarm Message (알람 메시지):** A 24-hour timeline bar showing machine status over time.
- Summary (일일 가동률):** A table showing daily operating ratios for different states:
 

Time	Ratio	State
15:04	62.8 %	RUN
02:17	9.5 %	STOP
01:43	7.2 %	MANUAL
01:23	5.8 %	ALARM
03:33	14.8 %	OFFLINE
- Manual Mode Ratio (일일 수작업 통계):** A bar chart showing the ratio of manual mode operations across various modes: MDI, EDIT, HND, JOG, REF, REMOTE, and ETC.
- Detail Data (가동 상세 현황):** A detailed view of the current job (FILE: O0001) showing:
  - STATUS:** RUN (START), ONUM: O0001, MODE: MEM.
  - PROGRESS:** START: 14:40, REMAIN: 00:00, PERCENT: 3.5 %, BLOCK NUM: 0 / 2233.
  - POSITION:** WCS: 54, AXIS X: -34.601, AXIS Y: 39.400, AXIS Z: -108.181.
  - MISCELLANEOUS:** FEED: 40, SPINDLE: 0, TOOL NUM: 1, PART COUNT: 240.

- 가동 상세 현황
  - 가동 중인 기계의 실시간 데이터를 상세히 확인



# NC Watch – Detail View Interface

- 확장데이터 뷰어
  - 고정된 지표와 별개로 추가로 읽어올 수 있는 데이터를 확인

The screenshot displays the NC Watch v1.0.0.43 interface for machine HWACHEON1. The interface is divided into several sections:

- Machine List:** A sidebar on the left lists machines: DOOSAN, WIA1, WIA2, UL4, UL5, HWACHEON1 (selected), and HWACHEON2.
- Status:** Shows MACHINE NAME as HWACHEON1 and ALARM as OFF. A horizontal bar chart at the bottom indicates machine status over 24 hours.
- Summary:** A table showing time and ratio for different states: RUN (62.8%), STOP (9.5%), MANUAL (7.2%), ALARM (5.8%), and OFFLINE (14.8%). A pie chart titled 'Operating Ratio' visualizes this data.
- Manual Mode Ratio:** A bar chart showing the percentage of time spent in various manual modes: MDI, EDIT, HND, JOG, REF, REMOTE, and ETC.
- Detail Data:** Provides specific machine parameters for file O0001, including status (START), progress (14:40), position (WCS 54, AXIS X -34.601, AXIS Y 39.400, AXIS Z -108.181), and miscellaneous data (FEED 40, SPINDLE 0, TOOL NUM 1, PART COUNT 240).

An orange arrow points to the '확장 데이터 뷰어' (Expanded Data Viewer) button in the bottom left corner of the interface.

NC Watch v1.0.0.43 | View Mode: Simple View | LICENSE | Online: 5 | Elapsed Time: 00:16:24 | Time: 2021.07.06 14:40:10

# NC Watch – Detail View Interface

- 확장데이터 뷰어
  - 고정된 지표와 별개로 추가로 읽어올 수 있는 데이터를 확인

The screenshot displays the NC Watch software interface for machine HWACHEON1. The interface is divided into several sections:

- Machine List:** A sidebar on the left lists machines: DOOSAN, WIA1, WIA2, UL4, UL5, HWACHEON1 (selected), and HWACHEON2.
- Status:** Shows the machine name 'HWACHEON1' and an 'ALARM' field. Below is a horizontal bar chart showing machine status over 24 hours.
- Summary:** A table showing time and ratio for different states:
 

Time	Ratio	State
15:04	62.8 %	RUN
02:17	9.5 %	STOP
01:43	7.2 %	MANUAL
01:23	5.8 %	ALARM

 An 'Operating Ratio' pie chart is also present.
- Detail Data:** Shows file 'O0001' and various operational metrics:
  - STATUS:** START (RUN), MODE MEM, ONUM O0001.
  - PROGRESS:** START 14:40, REMAIN 00:00, PERCENT 3.5 %, BLOCK NUM 0 / 2233.
  - POSITION:** WCS 54, AXIS X -34.601, AXIS Y 39.400, AXIS Z -108.181.
  - MISCELLANEOUS:** FEED 40, SPINDLE 0, TOOL NUM 1, PART COUNT 240.
- Expanded Data View:** A table at the bottom left shows expanded data for '파일변경' (File Change):
 

Item	Value
Main Onum	3005
Sub Onum	31
CNC Type	0
DataServer Update	5
I/O Channel	0
파일변경	9
Calc Time	62
ExData_8	
ExData_9	
ExData_10	

 An arrow points to this table with the text '확장 데이터 뷰어' (Expanded Data Viewer).

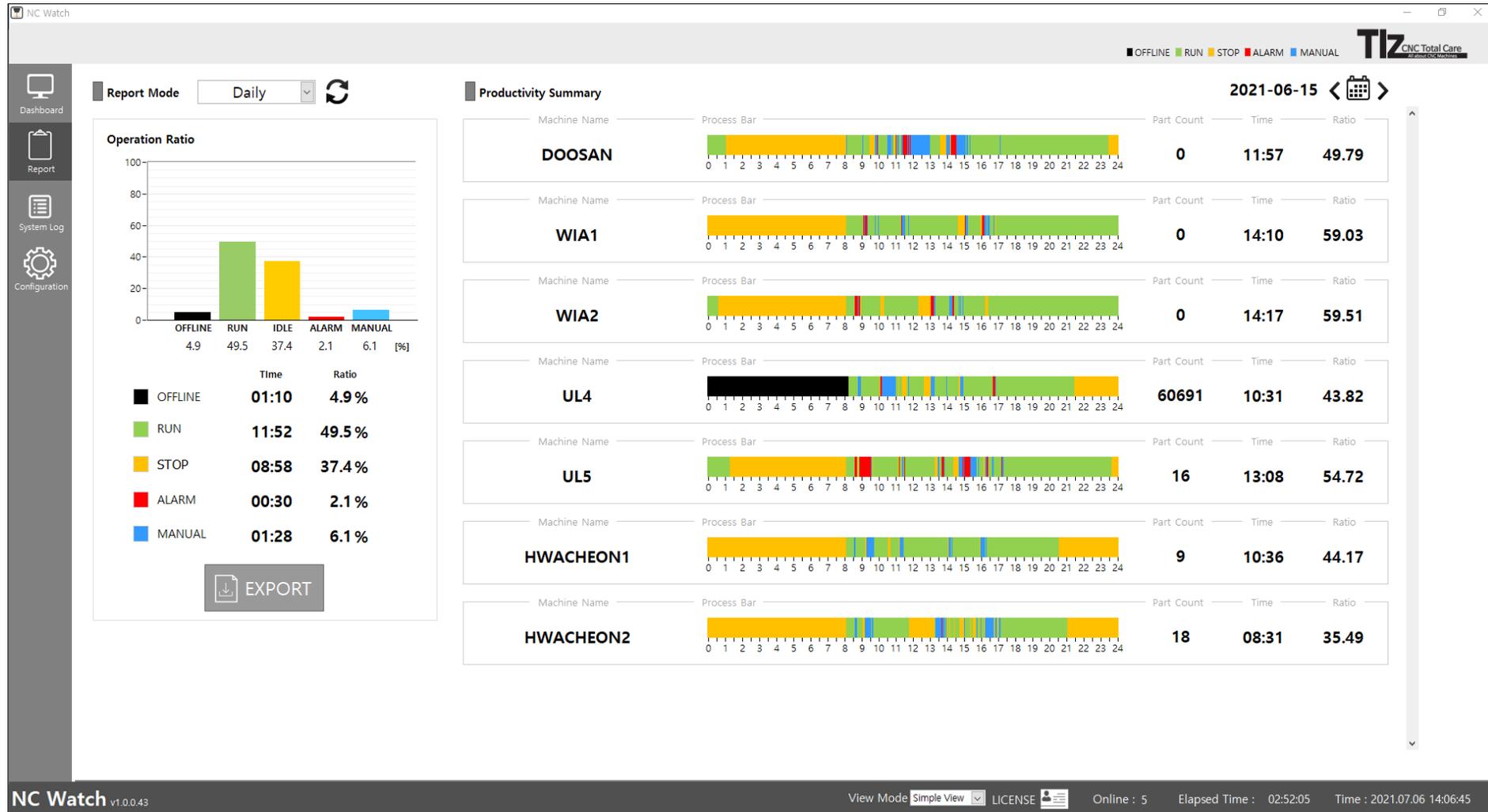
The bottom status bar shows: NC Watch v1.0.0.43, View Mode: Simple View, LICENSE, Online: 5, Elapsed Time: 00:16:24, Time: 2021.07.06 14:40:10.

# NC Watch

Summary & Report

# NC Watch – Report Interface

- 일간 가동률 정보 및 통계



# NC Watch – Report Interface

- 일간 가동률 정보 및 통계

The screenshot displays the 'NC Watch' report interface. On the left, a sidebar contains navigation options: Dashboard, Report, System Log, and Configuration. The main area is titled '기계명 상태그래프' (Machine Name Status Graph) and shows a 'Productivity Summary' for the date 2021-06-15. The summary includes a bar chart for each machine's status over a 24-hour period and a table of production metrics.

**Operation Ratio**

Mode	Time	Ratio
OFFLINE	01:10	4.9 %
RUN	11:52	49.5 %
STOP	08:58	37.4 %
ALARM	00:30	2.1 %
MANUAL	01:28	6.1 %

**Productivity Summary**

Machine Name	Part Count	Time	Ratio
DOOSAN	0	11:57	49.79
WIA1	0	14:10	59.03
WIA2	0	14:17	59.51
UL4	60691	10:31	43.82
UL5	16	13:08	54.72
HWACHEON1	9	10:36	44.17
HWACHEON2	18	08:31	35.49

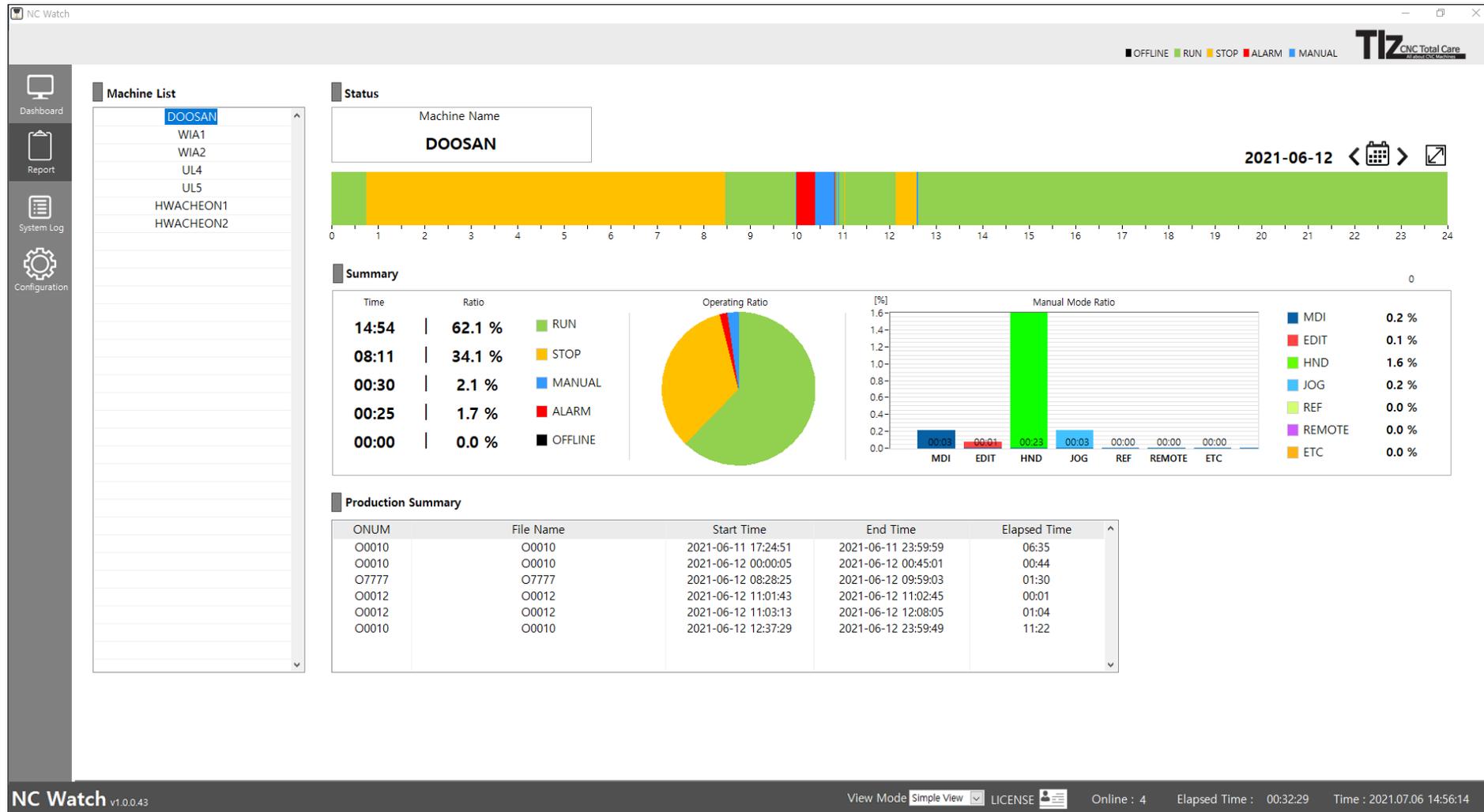
Annotations on the screenshot:

- '전체 일간 가동률 통계' (Overall Daily Operation Rate Statistics) points to the 'Operation Ratio' chart.
- 'Excel Report 출력' (Excel Report Output) points to the 'EXPORT' button.
- '생산량 가동시간 가동률' (Production Quantity, Operation Time, Operation Rate) points to the data table for the DOOSAN machine.

NC Watch v1.0.0.43 | View Mode: Simple View | LICENSE | Online : 5 | Elapsed Time : 02:52:05 | Time : 2021.07.06 14:06:45

# NC Watch – Report Detail View Interface

- 일간 가동률 정보 및 통계 상세



# NC Watch – Report Detail View Interface

- 일간 가동률 정보 및 통계 상세

**Machine List**

- DOOSAN
- WIA1
- WIA2
- UL4
- UL5
- HWACHEON1
- HWACHEON2

**Status**

Machine Name: DOOSAN

2021-06-12

**Summary**

Time	Ratio	Category
14:54	62.1 %	RUN
08:11	34.1 %	STOP
00:30	2.1 %	MANUAL
00:25	1.7 %	ALARM
00:00	0.0 %	OFFLINE

**Manual Mode Ratio**

Mode	Ratio
MDI	0.2 %
EDIT	0.1 %
HND	1.6 %
JOG	0.2 %
REF	0.0 %
REMOTE	0.0 %
ETC	0.0 %

**Production Summary**

ONUM	File Name	Start Time	End Time	Elapsed Time
O0010	O0010	2021-06-11 17:24:51	2021-06-11 23:59:59	06:35
O0010	O0010	2021-06-12 00:00:05	2021-06-12 00:45:01	00:44
O7777	O7777	2021-06-12 08:28:25	2021-06-12 09:59:03	01:30
O0012	O0012	2021-06-12 11:01:43	2021-06-12 11:02:45	00:01
O0012	O0012	2021-06-12 11:03:13	2021-06-12 12:08:05	01:04
O0010	O0010	2021-06-12 12:37:29	2021-06-12 23:59:49	11:22

일일 가동률

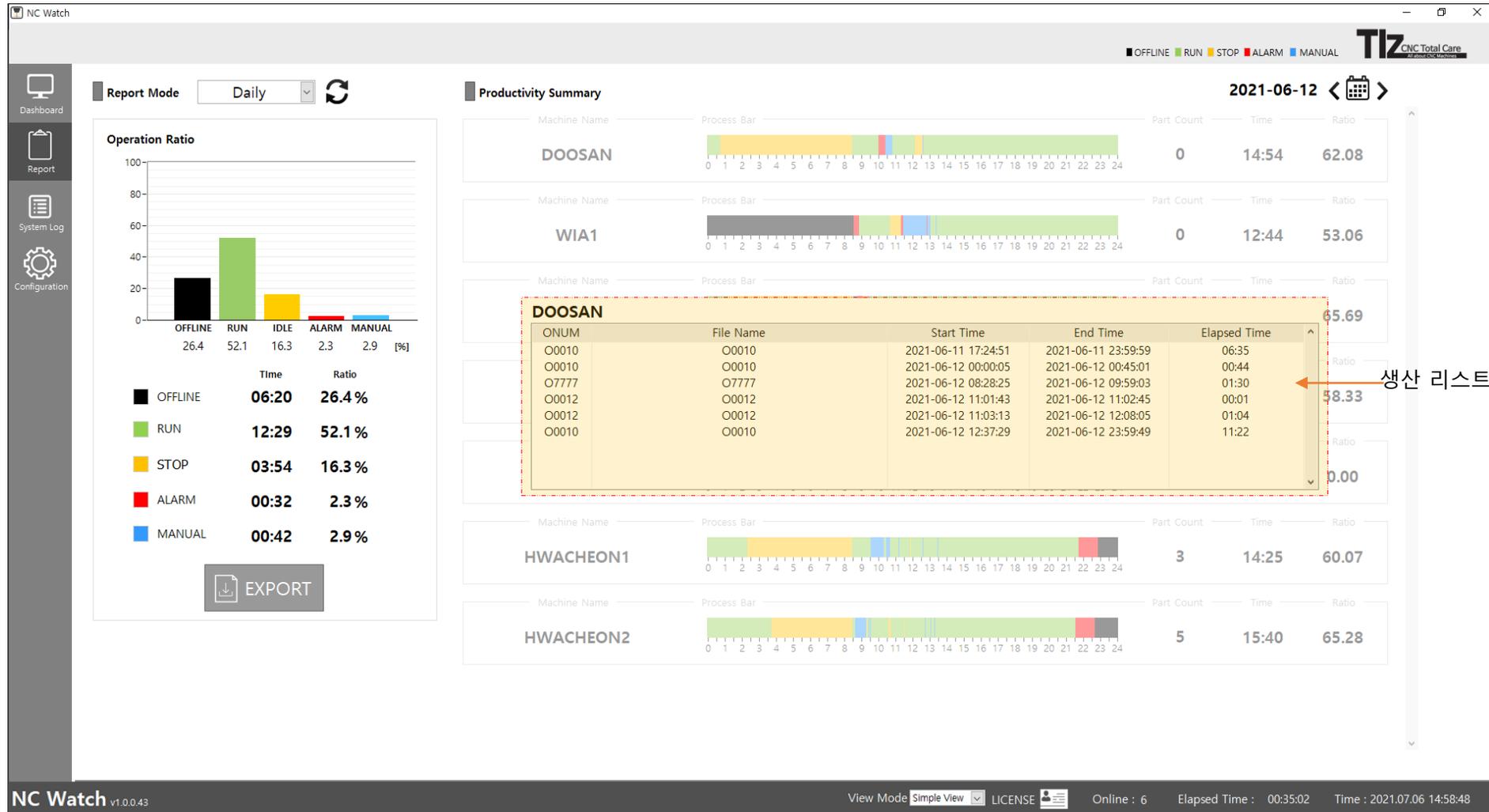
생산 리스트

NC Watch v1.0.0.43

View Mode: Simple View | LICENSE | Online : 4 | Elapsed Time : 00:32:29 | Time : 2021.07.06 14:56:14

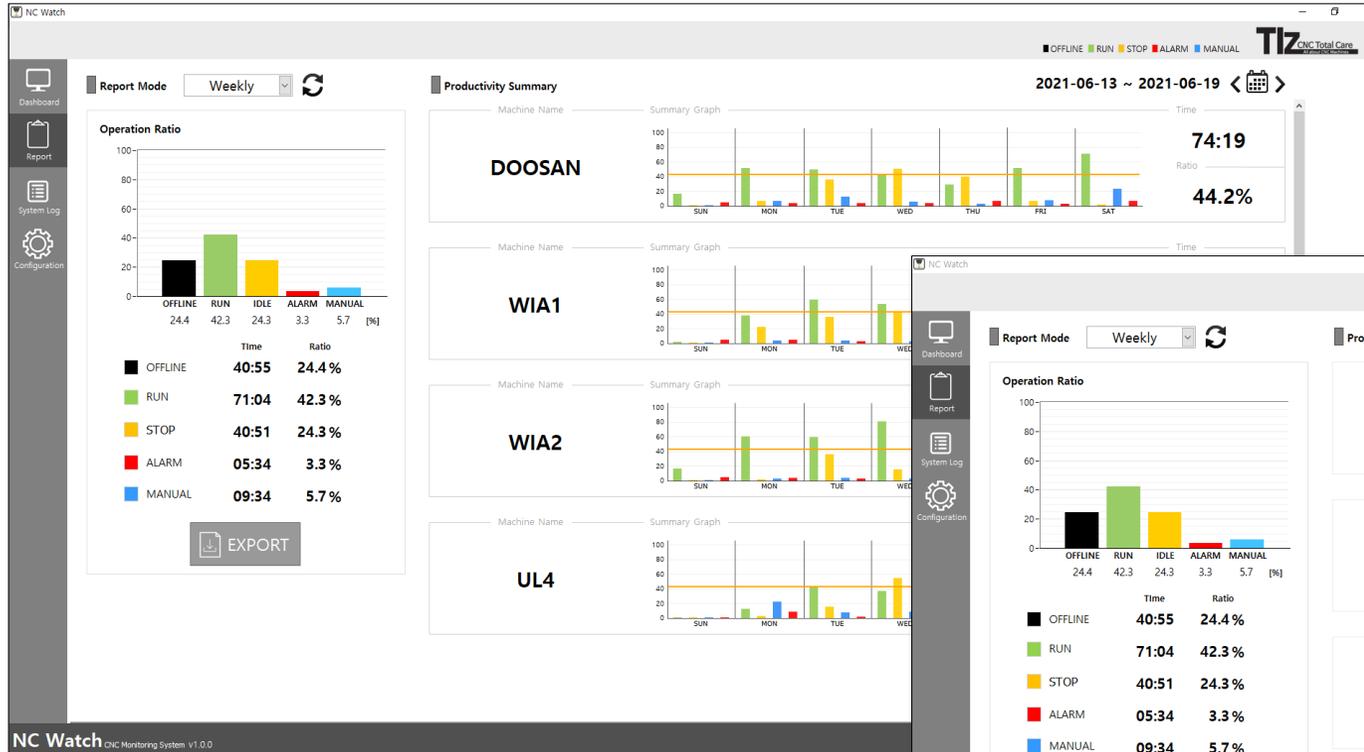
# NC Watch – Report Interface

- 일간 생산 리스트 확인

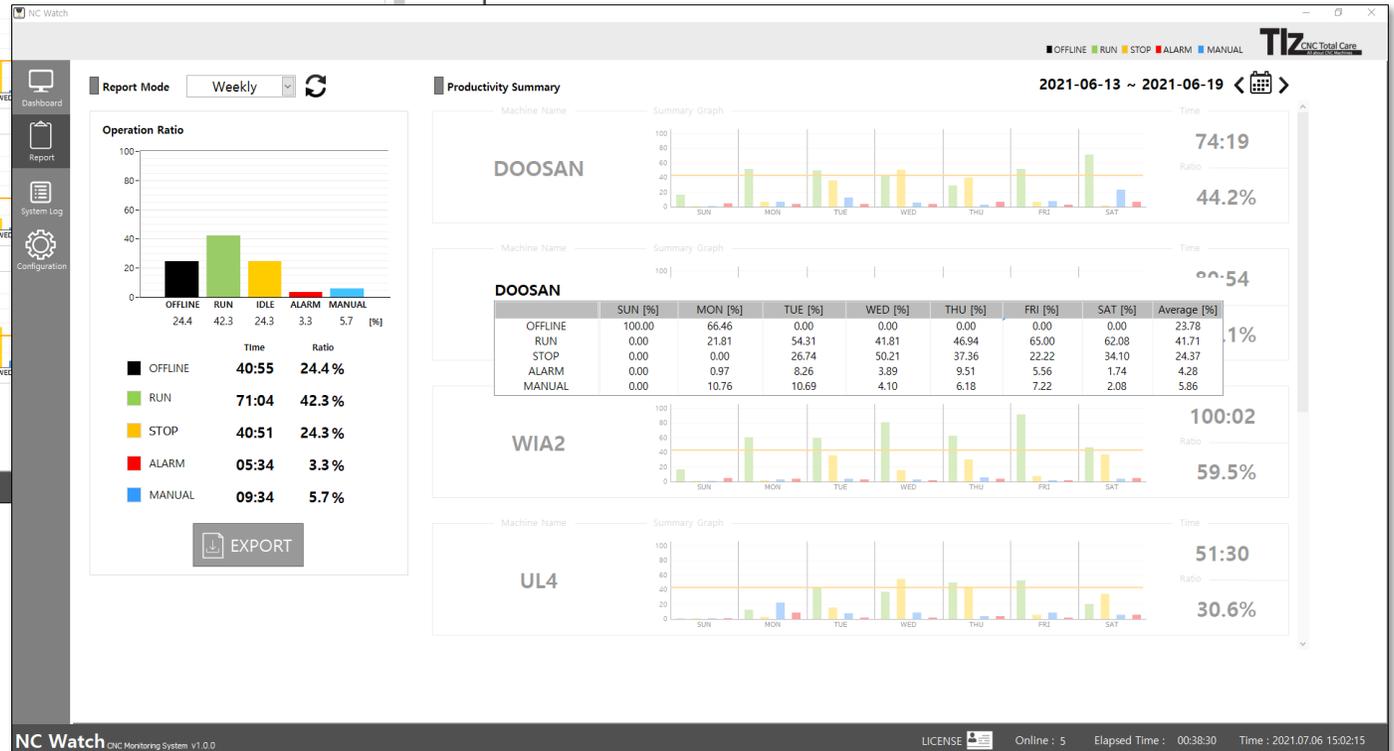


# NC Watch – Report Interface

- 주간 가동률 정보 및 통



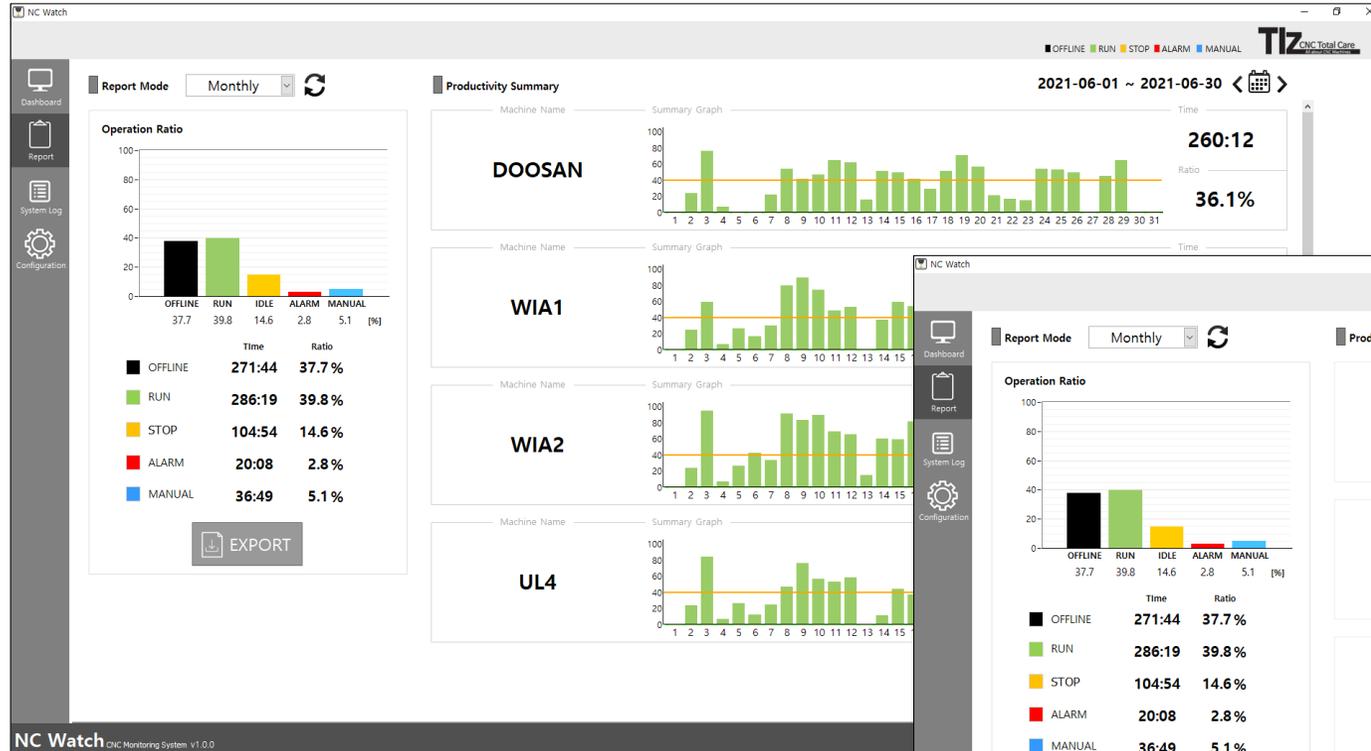
- 주간 통계 정보



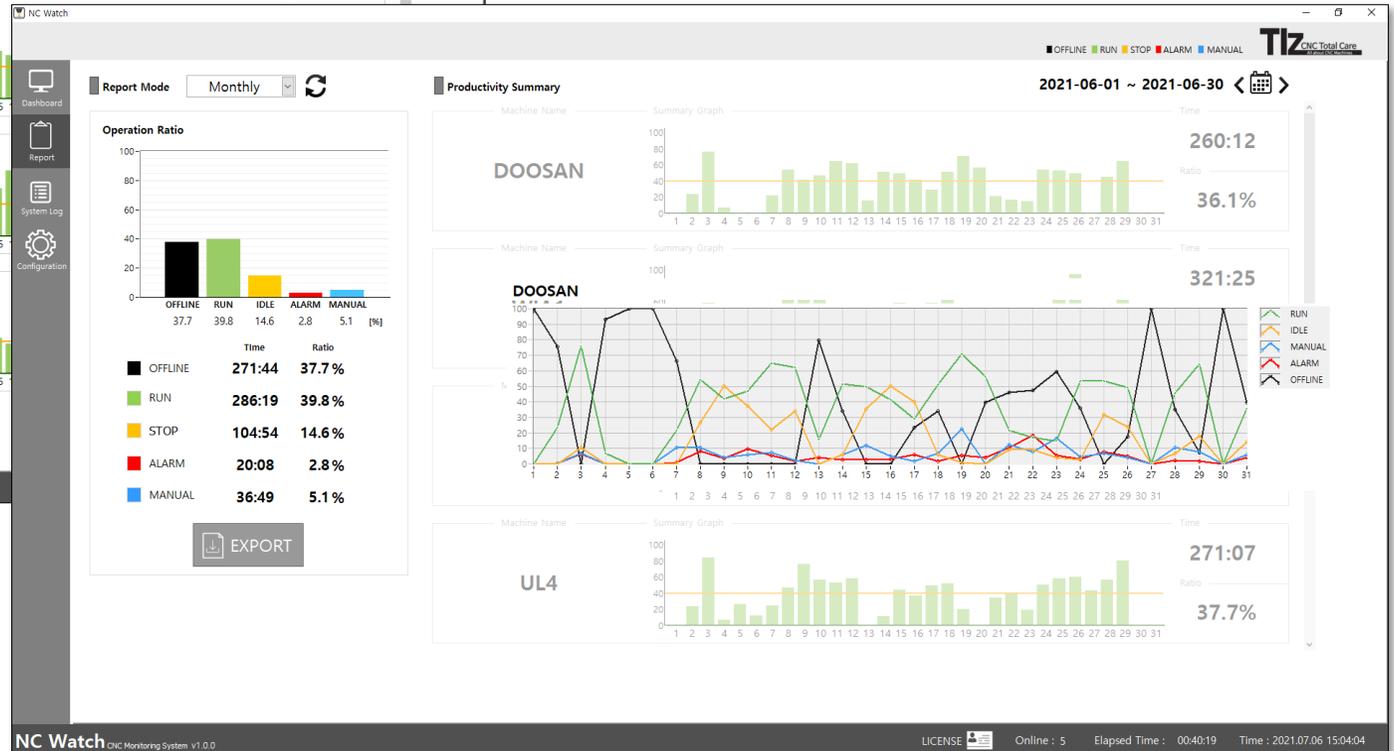
- 기계 별 가동률 정보

# NC Watch – Report Interface

- 월간 가동률 정보 및 통



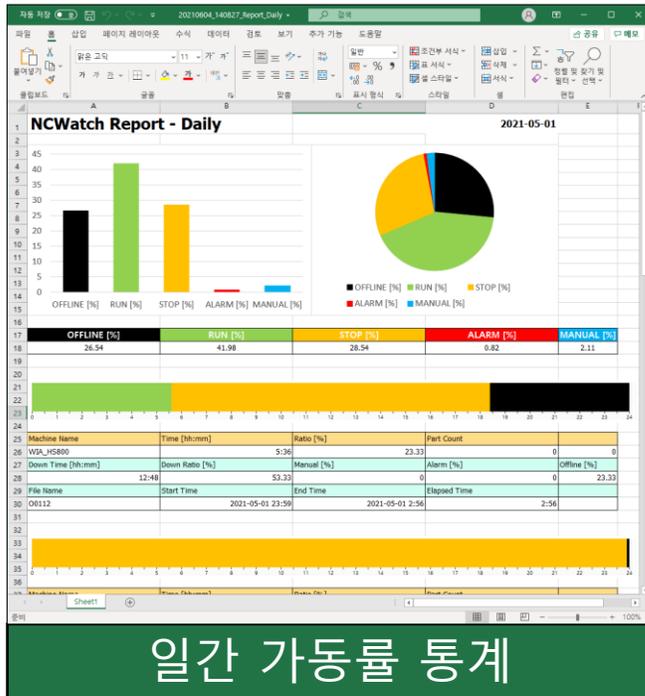
- 월간 통계 정보



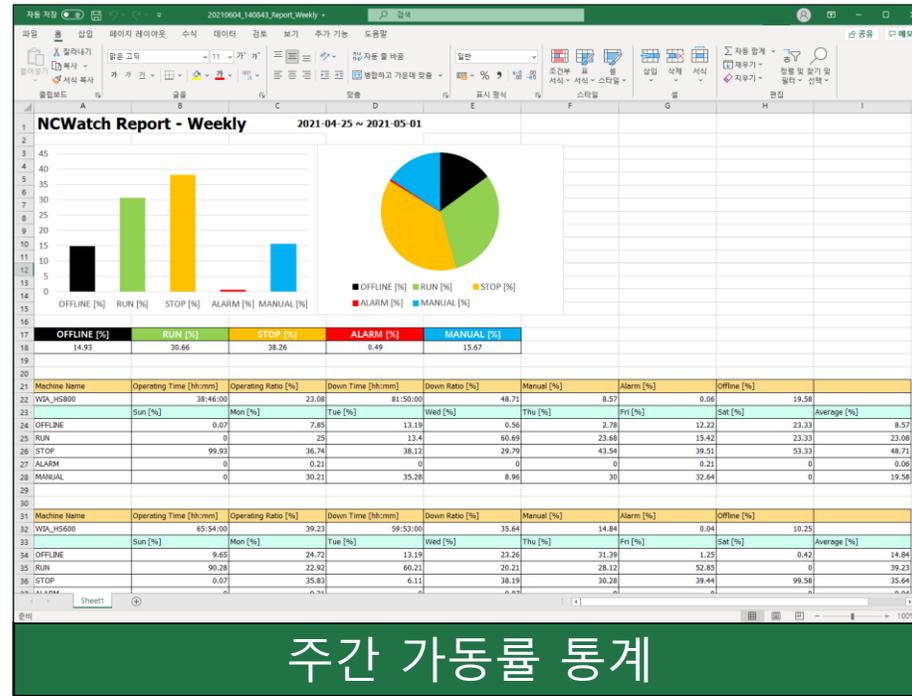
- 기계 별 가동률 정보

# NC Watch – Excel Export

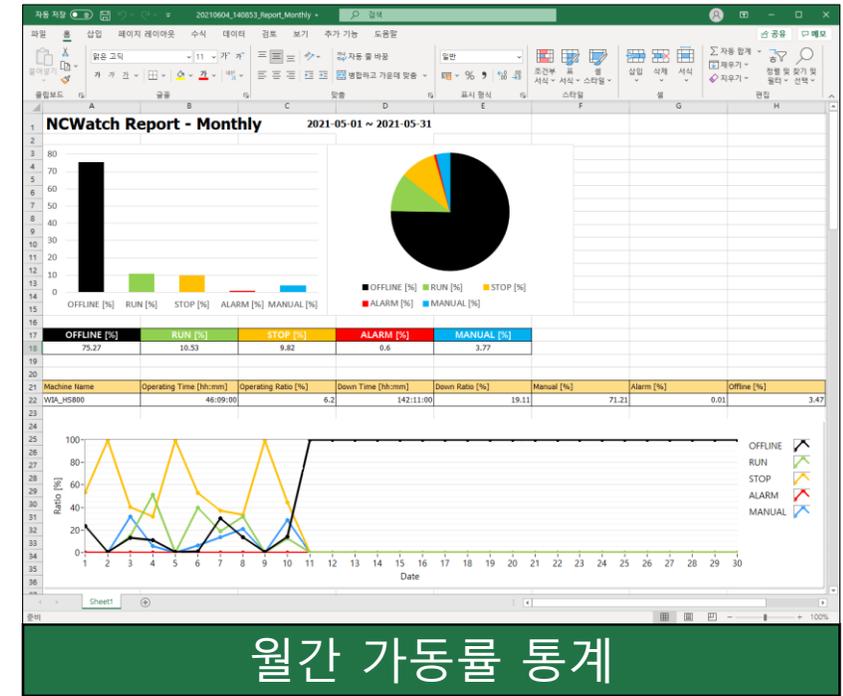
- Excel Report 출력 - 일간/주간/월간 통계



일간 가동률 통계



주간 가동률 통계



월간 가동률 통계

# NC Watch

System Log

# NC Watch – System Log

- 알람, OP 패널 이력 등 알람 메시지 출력

The screenshot displays the 'NC Watch' software interface. On the left, a sidebar contains navigation icons for Dashboard, Report, System Log (selected), and Configuration. The main area is divided into two panels: 'Machine List' and 'System Log'. The 'Machine List' shows several machines, with 'HWACHEON2' highlighted. The 'System Log' panel shows a table of events for the selected machine on 2021-06-21.

Timestamp	Message
2021-06-21 11:26:49	ALARM : (Z)+오버 트러블(이동전 체크)
2021-06-21 11:37:43	ALARM : (Z)+ 오버트러블(소프트리미트 1)
2021-06-21 11:41:15	ALARM : (Z)+ 오버트러블(소프트리미트 1)
2021-06-21 11:51:29	ALARM : (Z)+오버 트러블(이동전 체크)
2021-06-21 14:00:07	ALARM : (X)+ 오버트러블(소프트리미트 1)
2021-06-21 14:03:51	ALARM : (Z)+ 오버트러블(소프트리미트 1)
2021-06-21 14:14:13	ALARM : (Z)+오버 트러블(이동전 체크)
2021-06-21 15:55:15	ALARM : (X)+ 오버트러블(소프트리미트 1)
2021-06-21 17:20:35	ALARM : (X)+ 오버트러블(소프트리미트 1)
2021-06-21 17:21:35	ALARM : (X)+ 오버트러블(소프트리미트 1)
2021-06-21 20:26:43	ALARM :
2021-06-21 21:34:05	OFFLINE

At the bottom of the interface, the status bar shows 'NC Watch v1.0.0.43', 'View Mode Simple View', 'LICENSE', 'Online : 6', 'Elapsed Time : 00:55:31', and 'Time : 2021.07.06 15:19:17'.

# NC Watch

Configuration

# NC Watch – Configuration

- 기계 별 연결 정보 수정, 알람 메시지 수신자/조건 등 설정

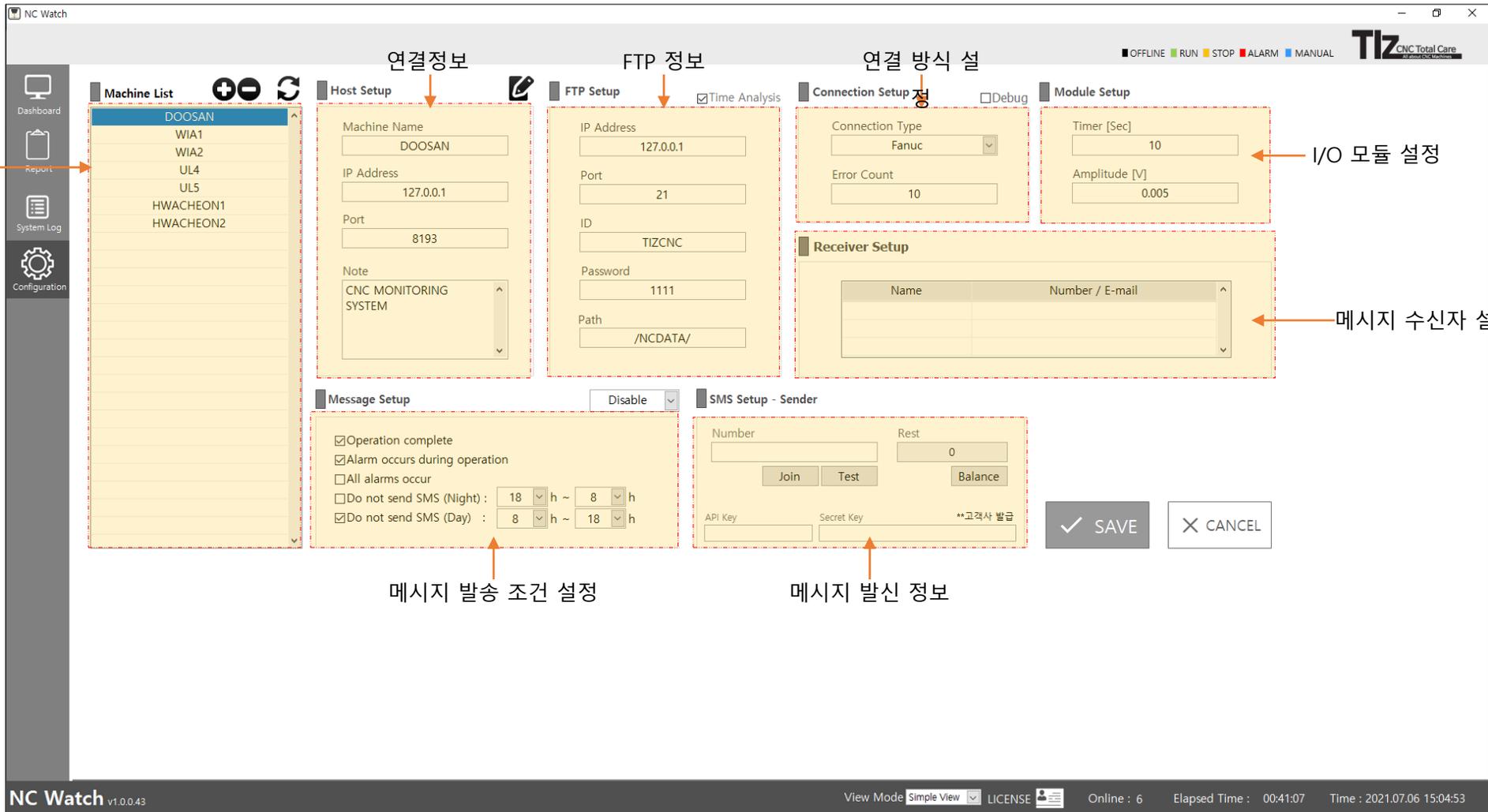
The screenshot displays the NC Watch configuration window for a machine named DOOSAN. The interface is organized into several sections:

- Machine List:** A list of machines including DOOSAN, WIA1, WIA2, UL4, UL5, HWACHEON1, and HWACHEON2. DOOSAN is currently selected.
- Host Setup:** Fields for Machine Name (DOOSAN), IP Address (127.0.0.1), Port (8193), and a Note (CNC MONITORING SYSTEM).
- FTP Setup:** Fields for IP Address (127.0.0.1), Port (21), ID (TIZCNC), Password (1111), and Path (/NCDATA/).
- Connection Setup:** Fields for Connection Type (Fanuc) and Error Count (10).
- Module Setup:** Fields for Timer [Sec] (10) and Amplitude [V] (0.005).
- Receiver Setup:** A table for defining alarm receivers with columns for Name and Number / E-mail.
- Message Setup:** A section with a 'Disable' dropdown and checkboxes for 'Operation complete', 'Alarm occurs during operation', and 'All alarms occur'. It also includes time-based settings for 'Do not send SMS (Night)' (18h ~ 8h) and 'Do not send SMS (Day)' (8h ~ 18h).
- SMS Setup - Sender:** Fields for Number, Rest (0), API Key, Secret Key, and a 'Balance' field. Includes 'Join', 'Test', and 'Balance' buttons.

At the bottom right, there are 'SAVE' and 'CANCEL' buttons. The status bar at the bottom shows 'NC Watch v1.0.0.43', 'View Mode: Simple View', 'LICENSE', 'Online: 6', 'Elapsed Time: 00:41:07', and 'Time: 2021.07.06 15:04:53'.

# NC Watch – Configuration

- 기계 별 연결 정보 수정, 알람 메시지 수신자/조건 등 설정

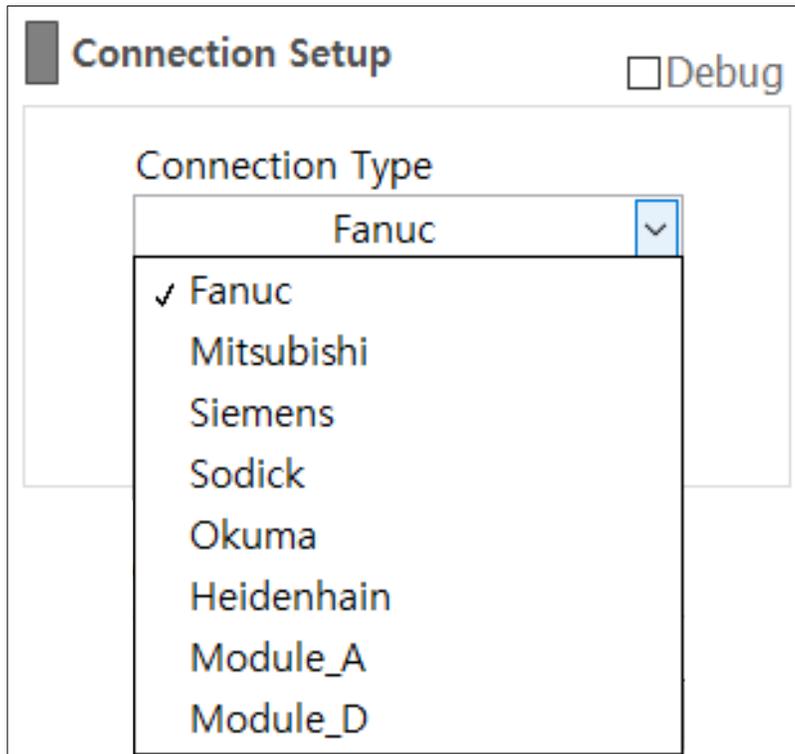


The screenshot shows the configuration interface for a specific machine (DOOSAN) in the NC Watch system. The interface is divided into several sections, each highlighted with a red dashed box and annotated with Korean text:

- Machine List:** A list of machines including DOOSAN, WIA1, WIA2, UL4, UL5, HWACHEON1, and HWACHEON2. An arrow points to this list with the label "기계 리스트".
- Host Setup:** Fields for Machine Name (DOOSAN), IP Address (127.0.0.1), Port (8193), and Note (CNC MONITORING SYSTEM). An arrow points to this section with the label "연결정보".
- FTP 정보:** Fields for IP Address (127.0.0.1), Port (21), ID (TIZCNC), Password (1111), and Path (/NCDATA/). An arrow points to this section with the label "FTP 정보".
- 연결 방식 설:** Fields for Connection Type (Fanuc) and Error Count (10). An arrow points to this section with the label "연결 방식 설".
- Module Setup:** Fields for Timer [Sec] (10) and Amplitude [V] (0.005). An arrow points to this section with the label "I/O 모듈 설정".
- Receiver Setup:** A table for setting message recipients. An arrow points to this section with the label "메시지 수신자 설정".
- Message Setup:** Checkboxes for "Operation complete", "Alarm occurs during operation", and "All alarms occur". Time settings for "Do not send SMS (Night)" (18h ~ 8h) and "Do not send SMS (Day)" (8h ~ 18h). An arrow points to this section with the label "메시지 발송 조건 설정".
- SMS Setup - Sender:** Fields for Number, Rest (0), API Key, and Secret Key. An arrow points to this section with the label "메시지 발신 정보".

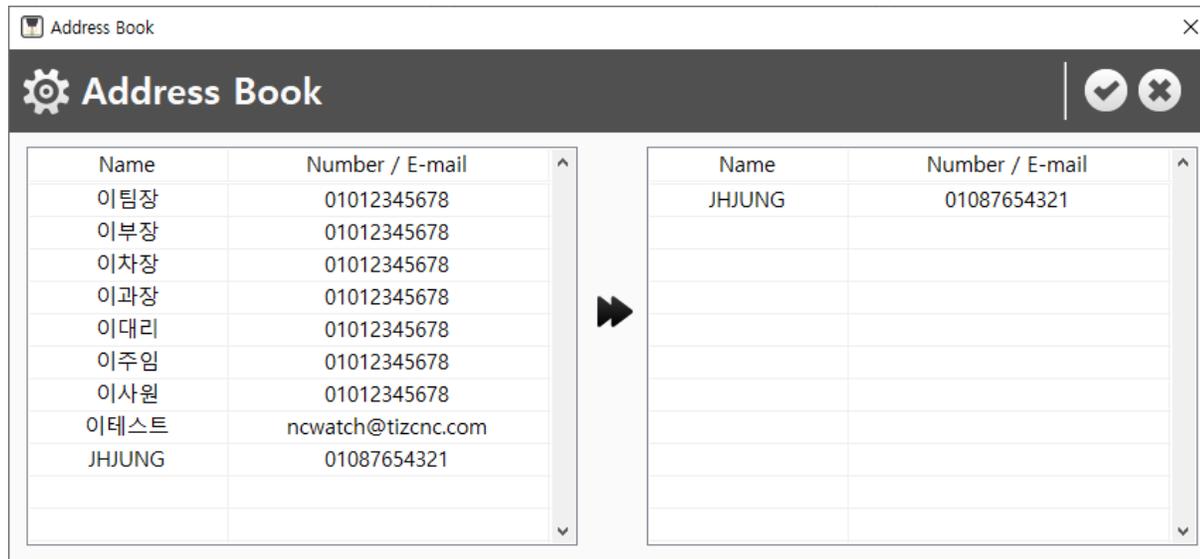
At the bottom of the interface, there are "SAVE" and "CANCEL" buttons. The status bar at the very bottom shows "NC Watch v1.0.0.43", "View Mode: Simple View", "LICENSE", "Online: 6", "Elapsed Time: 00:41:07", and "Time: 2021.07.06 15:04:53".

- 기계 별 연결 방식 설정

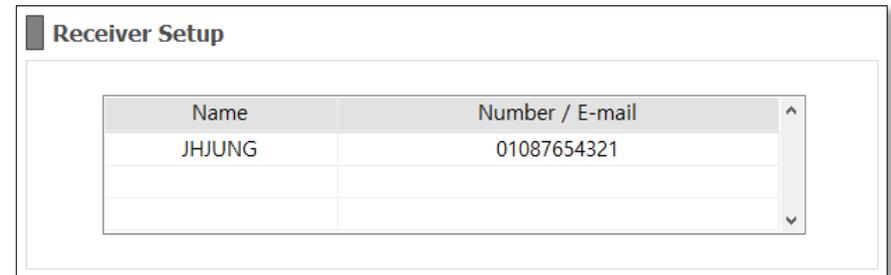


제조사	연결방식
FANUC	FOCAS
MITSUBISHI	EZSocketNC
SODICK	MTConnect
OKUMA	MTConnect
SIEMENS	OPC-UA
HEIDENHAIN	LSV2
기타 구형 컨트롤러	MODBUS(Ethernet I/O Module)

- 메시지 수신자 설정
  - 연락처(Address Book)에 미리 직원 연락처 등록
  - 기계별로 수신자를 다르게 설정 가능



- 직원 연락처 등록



- 기계 별 수신자 등록

- 메시지 발송 조건 설정

- 원하는 조건으로 메시지 발송 가능
- 메시지 전체를 On/Off 할 수 있음
- 시간대를 설정하여 메시지를 받고 싶지 않을 때 받지 않을 수 있음
  - 야간 발송 금지(Do not send SMS – Night) : 야간에 메시지를 발송하지 않도록 해야 할 때
  - 주간 발송 금지(Do not send SMS – Day) : 주간(근무 시간)에 메시지를 발송하지 않도록 해야 할 때

메시지 전송 활성화/비활성화

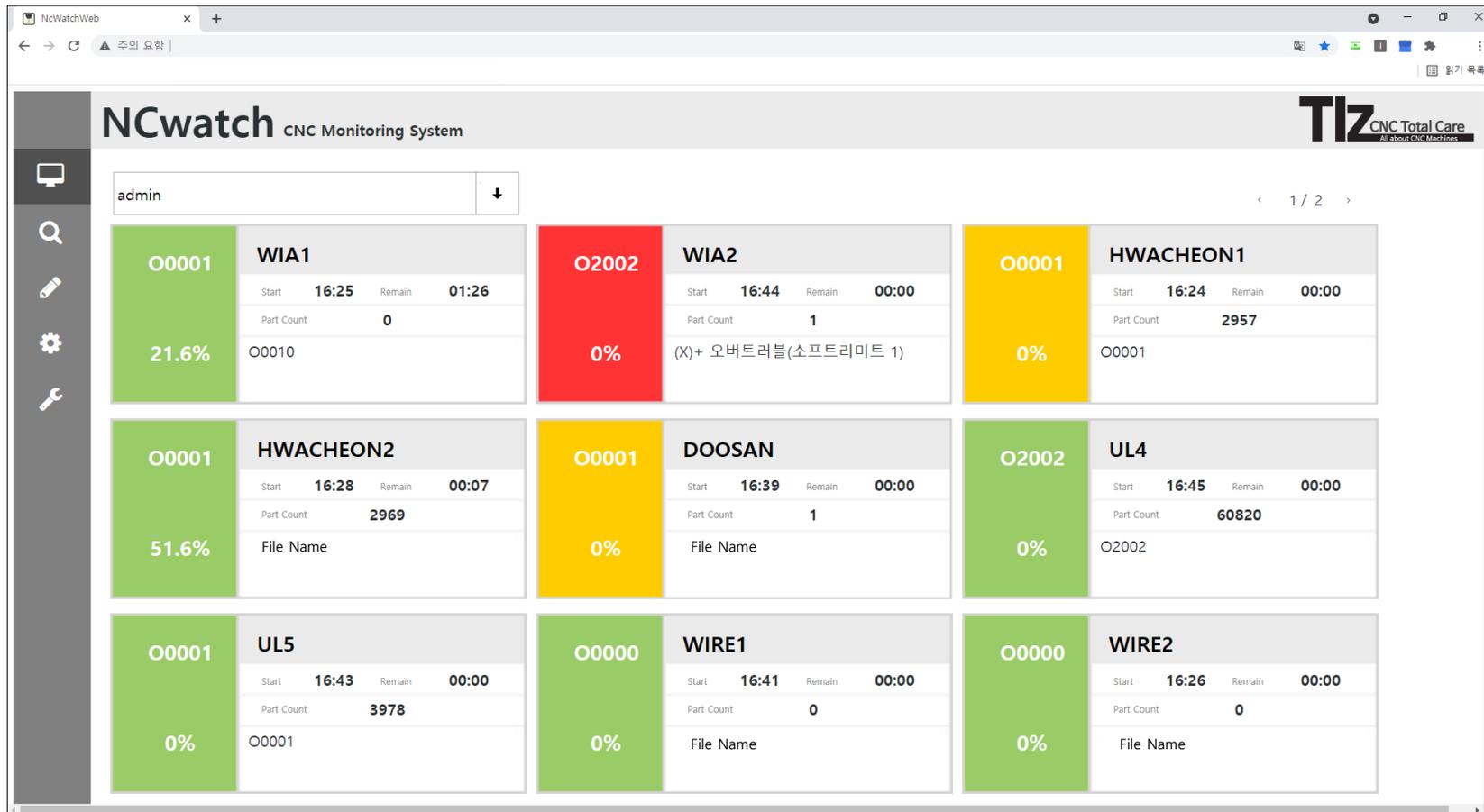
The screenshot shows the 'Message Setup' window with the following settings and annotations:

- Message Setup** (Title bar)
- Disable** (Button with dropdown arrow) - An arrow points to this button from the text '메시지 전송 활성화/비활성화' above.
- Operation complete** - An arrow points to this checkbox from the text '가공 완료 시 발송'.
- Alarm occurs during operation** - An arrow points to this checkbox from the text '가공 중 알람 발생 시 발송'.
- All alarms occur** - An arrow points to this checkbox from the text '모든 알람 발생 시 발송'.
- Do not send SMS (Night) :** 18 h ~ 8 h - An arrow points to this checkbox from the text '야간 발송 금지'.
- Do not send SMS (Day) :** 8 h ~ 18 h - An arrow points to this checkbox from the text '주간(근무 시간) 발송 금지'.

NC Watch

NC Watch Web

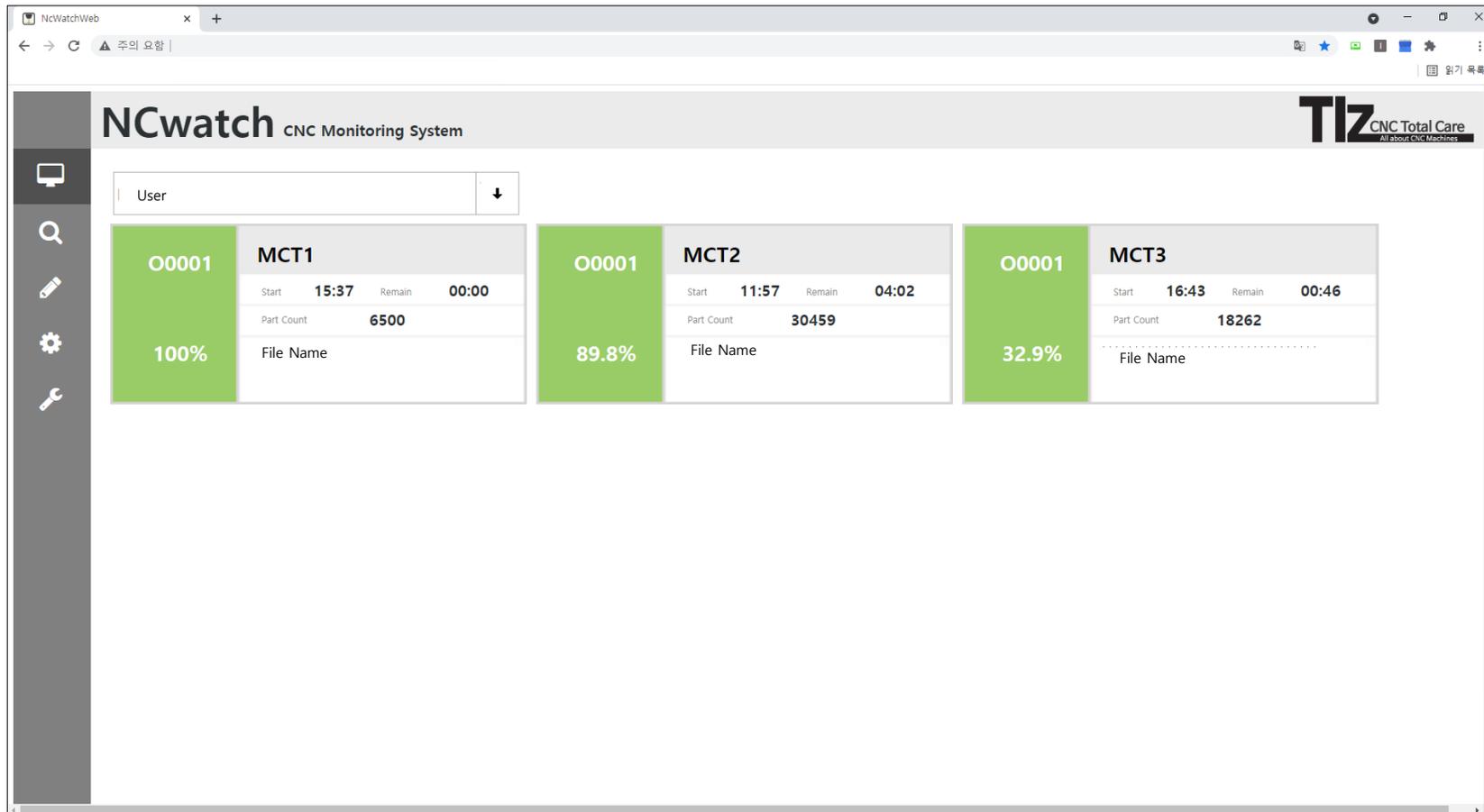
- NC Watch Web(admin)
  - 별도 설치 없이 Web Browser로 접속하여 사용
  - ID로 관리자와 사용자를 구분하여 사용



The screenshot displays the NC Watch Web monitoring system interface. The browser window title is "NcWatchWeb". The page header includes "NCwatch CNC Monitoring System" and the TIZ CNC Total Care logo. A search bar contains the text "admin". The main content area shows a grid of machine status cards, each with a colored background and specific data:

Machine ID	Machine Name	Start	Remain	Part Count	File Name	Progress
O0001	WIA1	16:25	01:26	0	O0010	21.6%
O2002	WIA2	16:44	00:00	1	(X)+ 오버트러블(소프트리미트 1)	0%
O0001	HWACHEON1	16:24	00:00	2957	O0001	0%
O0001	HWACHEON2	16:28	00:07	2969		51.6%
O0001	DOOSAN	16:39	00:00	1		0%
O2002	UL4	16:45	00:00	60820	O2002	0%
O0001	UL5	16:43	00:00	3978	O0001	0%
O0000	WIRE1	16:41	00:00	0		0%
O0000	WIRE2	16:26	00:00	0		0%

- NC Watch Web(user)
  - 별도 설치 없이 Web Browser로 접속하여 사용
  - ID로 관리자와 사용자를 구분하여 사용



The screenshot displays the NC Watch Web interface in a browser window. The page title is "NCwatch CNC Monitoring System". A user selection dropdown menu is visible at the top left. The main content area shows three machine monitoring cards for MCT1, MCT2, and MCT3. Each card displays a progress bar, a percentage, and a table of machine statistics.

Machine ID	Machine Name	Start	Remain	Part Count	File Name
O0001	MCT1	15:37	00:00	6500	
O0001	MCT2	11:57	04:02	30459	
O0001	MCT3	16:43	00:46	18262	

- Admin 계정 권한

- User ID 생성 가능
- User가 조회할 수 있는 장비 목록 설정 가능
- 모든 장비 조회 가능

- User 계정 권한

- User에 할당된 장비 목록을 조회할 수 있음
-

# NC Watch

vs NC Watch Web

# NC Watch – vs NC Watch Web

- NC Watch와 NC Watch Web의 기능 차이점

	NC Watch	NC Watch Web
Dashboard	○	○
가동 상태 상세보기	○	○
Report 열람	○	○
Excel 출력	○	×
기계 연결정보 설정	○	×
메시지 수신자 설정	○	×
메시지 발송 조건 설정	○	×
비가동사유 입력	○	×
시스템 로그 확인	○	×