WiiConnect24

Martin Buchholz

Developer Relations & Support

Nintendo of Europe

Software Development Support Group

Wii SUMMIT 2008

Nintendo

WiiConnect24

Something New Every Day
Sending Messages
Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Wii 2008 SUMMIT

Nintendo

Classic Game Consoles

- Example Nintendo GameCube:
  - Startup Rolling Cube
  - IPL Menu never changes
  => Static behaviour

- Users turn on when there's a game they want to play.

- Users without a game are excluded.

Wii 2008 SUMMIT

Television

- Located in the living room
- Enjoyed by the entire family

- People are switching on the TV wondering if there is anything interesting to watch.

Wii SUMMIT 2008

Wii

- Current news data
- Current weather information
- New Messages from Friends

- Eliminate the barrier between those who play and those who don't play.

Wii SUMMIT 2008

Always connected

- Working 24/7
- Asynchronous communication
- Not real-time
- Not high-bandwidth

Wii 2008 SUMMIT

Standby Mode

- Power Supply only to the components which are necessary for WiiConnect24
  - Processing Device
  - Memory
  - Network communication block
  - Wii Console NAND memory
  - Slot illumination

Something New Every Day

Contents

Something New Every Day
Sending Messages
Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Wii 2008 SUMMIT

Nintendo

Message Exchange

- Similar to E-Mail technology
  - Subject, Body Text, Sender, Recipient
  - Binary Attachments, Mii Data and more

- Each Wii has it's own e-mail address
  - Example: *w16130461505491222 @wii.com*

- Wii Address Book is used

Messages between applications

- Include binary attachments
  - Screenshot data
  - User-created content
  - Highscore Lists
  - Item Exchange

Wii 2008 SUMMIT

Messages between applications

Item exchange
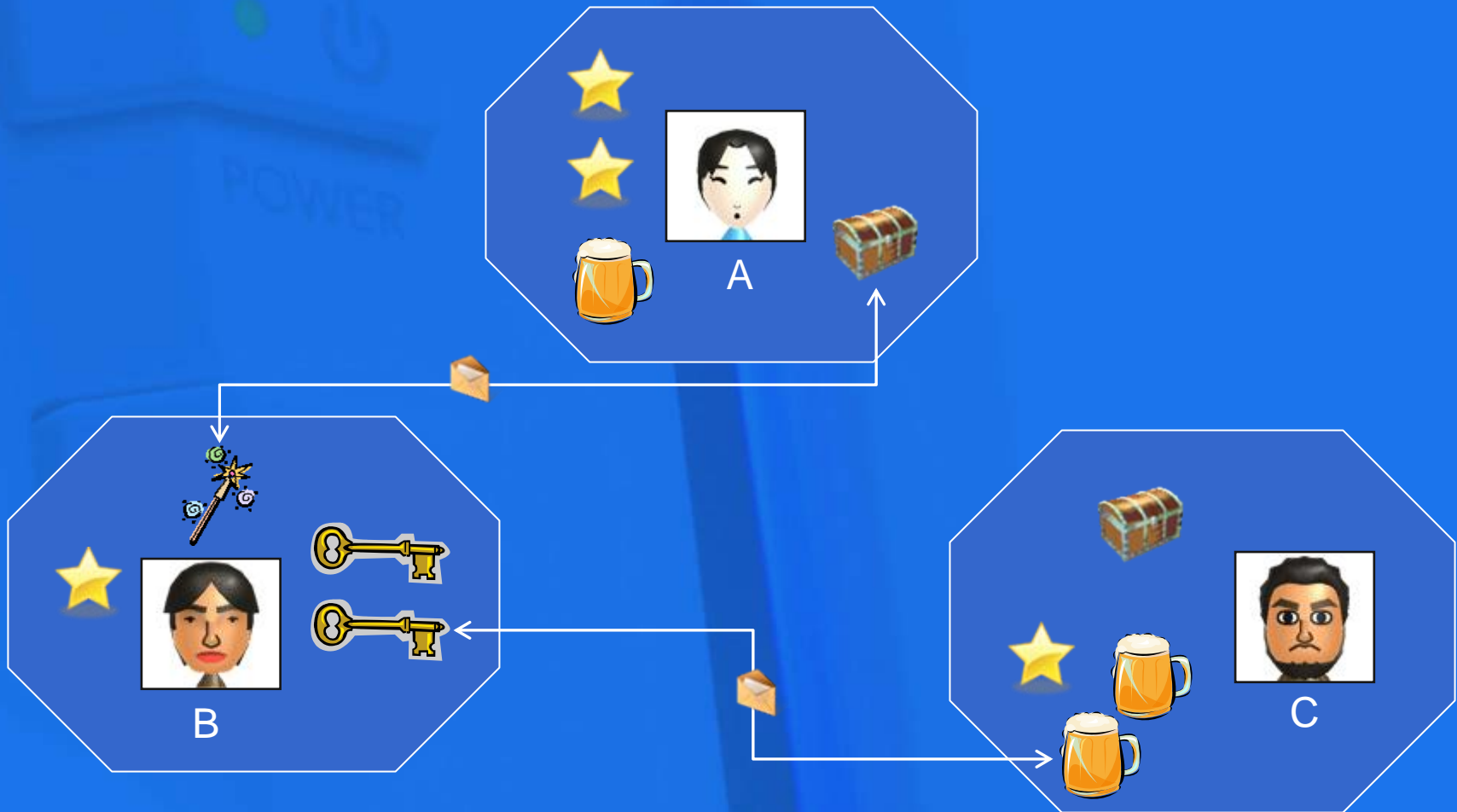
Non-realtime communication.
Can be used for offline games, single-player games.

Send Messages to Wii Menu

- Message Board of local Wii
- Message Board of Wii Friends

- Invitation Messages
  - Gifts
  - "Message Jump" to NAND applications
    - The message will display a START button.
    - Pressing the button starts a Channel automatically.

Special Features

- All Messages:
  - Receipt Notification
  - Overwrite Feature

- Wii Message Board only
  - Display Date
  - Time Delay
  - Change Nickname
  - Reply Permission

WiiConnect24

Something New Every Day
Sending Messages
Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Wii 2008 SUMMIT

Nintendo

Message Object

Message Type	Destination of Message
`APP`	Any Application
`APP_HIDDEN`	Relevant Application
`MENU`	Message Board
`MENU_SHARED`	Message Board and any application
`PUBLIC`	E-Mail address

Note: Message types start with `NWC24_MSGTYPE_WII_`
       Example: `NWC24_MSGTYPE_WII_APP`

Wii 2008 SUMMIT

Nintendo

Example

Send a message from Wii to another Wii

Wii 2008 SUMMIT

Process Flow

1. Initialize the Message object
   - Message to another Wii
2. Destination
   - Specify Wii Number
3. Subject line
4. Message body text
5. Post to Outbox

Wii 2008
SUMMIT

Nintendo

```
NWC24MsgObj  msgObj;
NWC24UserId  id=12345678;
char         *subject="Test Message";
char         *body="Hello World\r\n";


1   NWC24InitMsgObj(&msgObj,
              NWC24_MSGTYPE_WII_APP);
2   NWC24SetMsgToId(&msgObj, id);
3   NWC24SetMsgSubject(&msgObj, subject,
              strlen(subject));
4   NWC24SetMsgText(&msgObj, body,
              strlen(body), NWC24_US_ASCII,
              NWC24_ENC_7BIT);
5   NWC24CommitMsg(&msgObj);
```

Wii 2008
SUMMIT

Nintendo

Simple API – No Network Programming

- Network application exchange
  - Completely done by Wii Firmware
  - Not by game application

- Basic application features can be very quickly integrated
  - NWC24 API High-Level access
  - Much easier than Network Programming

WiiConnect24

Something New Every Day
Sending Messages
Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Wii 2008 SUMMIT

Nintendo

Automatic Data Download

- Download data at given intervals
- Data stored in NAND memory
- No complicated network processing
- Automatically verifies signatures

Wii 2008 SUMMIT

Nintendo

Automatic Data Download

- WiiConnect24 service checks for updated content

- Download only if it has been updated

Wii 2008 SUMMIT

Nintendo

Automatic Data Download

- Register
  - Download URL
  - Download Schedule
  - [Application ID]

- Application controls download schedule
  - Using Scheduler
  - Data will be saved in Download Box

Wii 2008
SUMMIT
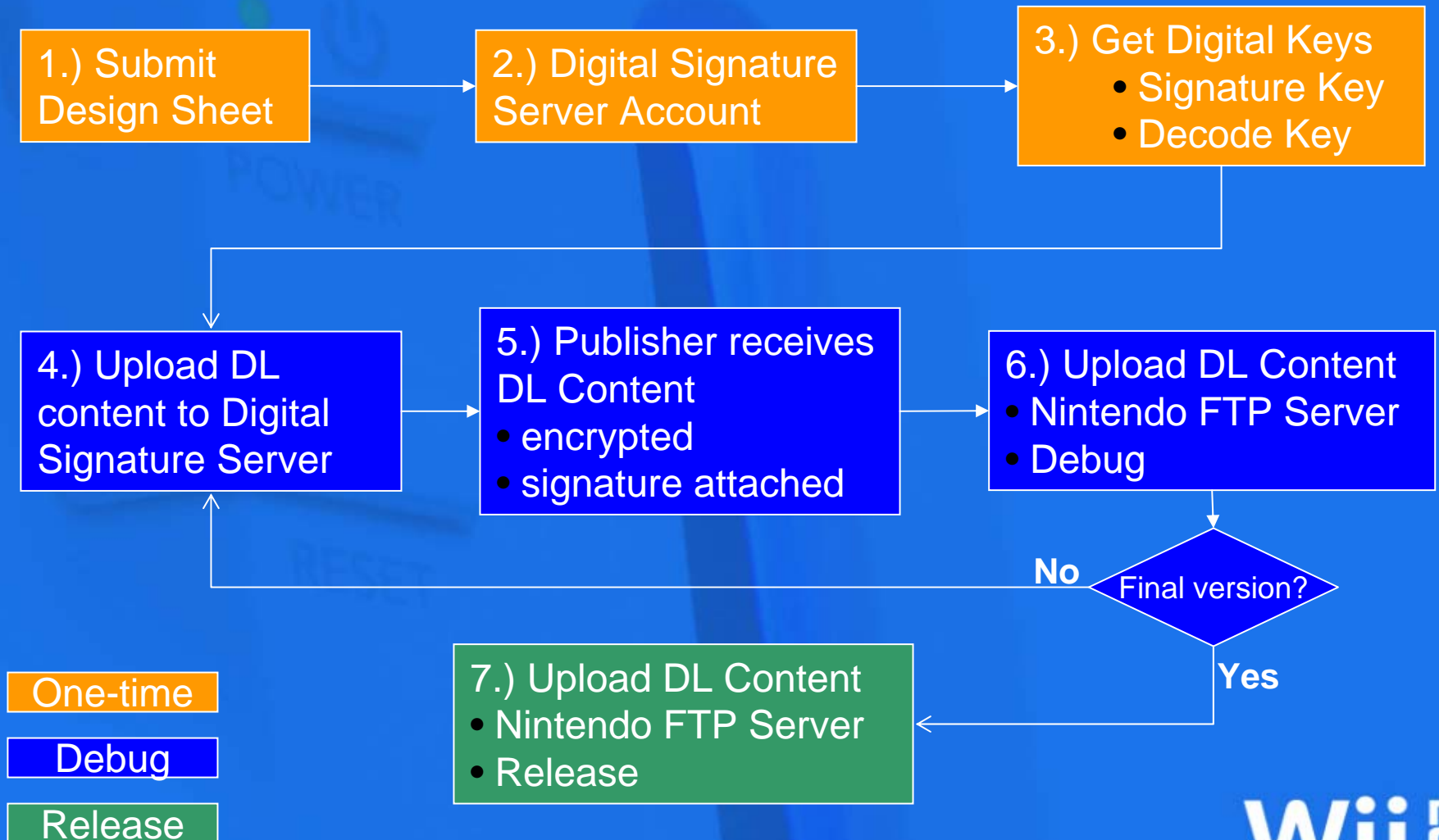
Nintendo

NWC24 / WFC Downloads

- WiiConnect24 Downloads are different from Nintendo Wi-Fi Connection Downloads

	NWC24	WFC
Real-time	No	Yes
Data available at game start	Yes	No

Wii 2008 SUMMIT

Nintendo

Examples

- Forecast Channel
- News Channel

- **NWC24 DL now available for games!**
- Add free game items after launch
- Monthly events
- Post interesting news on the start screen of the game

Wii SUMMIT 2008

Nintendo

NWC24 Download feature Process

1.) Submit Design Sheet → 2.) Digital Signature Server Account → 3.) Get Digital Keys
- Signature Key
- Decode Key

4.) Upload DL content to Digital Signature Server → 5.) Publisher receives DL Content
- encrypted
- signature attached
→ 6.) Upload DL Content
- Nintendo FTP Server
- Debug

Final version?
- No
- Yes

7.) Upload DL Content
- Nintendo FTP Server
- Release

One-time
Debug
Release

Wii 2008 SUMMIT

(Nintendo)

Channel Scripts

- Use NWC24 Download data to retrieve latest information
- Use Channel Scripts to display it in your channel icon & banner data

- Very powerful tool for WiiWare games!!
- Channel Scripts SDK available in June

Wii™ 2008 SUMMIT

Nintendo

WiiConnect24

Something New Every Day
Sending Messages
Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Nintendo

Wii 2008 SUMMIT

Download Task Management

- Specify up to 2 Download Tasks per game

- Maximum 500 KBytes in total for both Download tasks

Download Task Management

- Download Task can be executed a maximum of 100 times
  - Application can reset the counter!

- Total number of Download Tasks: 112
  - No. 113 overwrites the oldest task

Wii 2008 SUMMIT

Download Schedule

- Download "Once every N hours"

  - Task 1:
    - No shorter than 6 hours
    - No longer than 168 hours

  - Task 2:
    - No shorter than 24 hours
    - No longer than 168 hours

Wii 2008 SUMMIT

Nintendo

How to set N?

- High number (e.g. N=72)
  - Long term information
  - New Level Data, Ghost Data etc.
  - Download Task will remain very long!

- Low Number (e.g. N=6)
  - Short term information
  - Special events, competitions
  - Download Task will die quicker!

WiiConnect24

Something New Every Day
Sending Messages
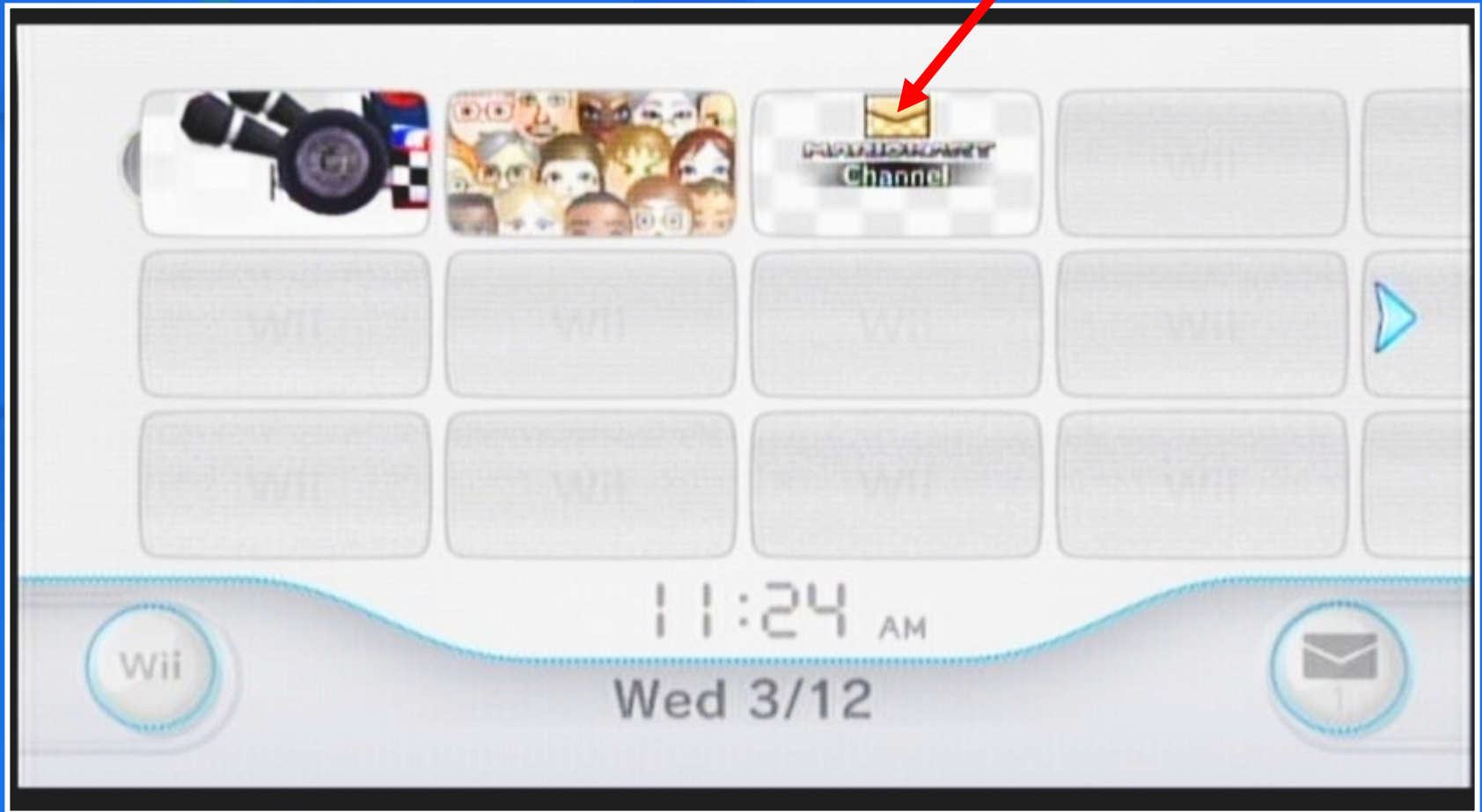Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Wii 2008
SUMMIT

Nintendo

Mario Kart Channel in Wii Menu

The player got a Message

Mario Kart Channel Standard Banner

Friend Challenge

Message Exchange of Ghost data / Channel Script

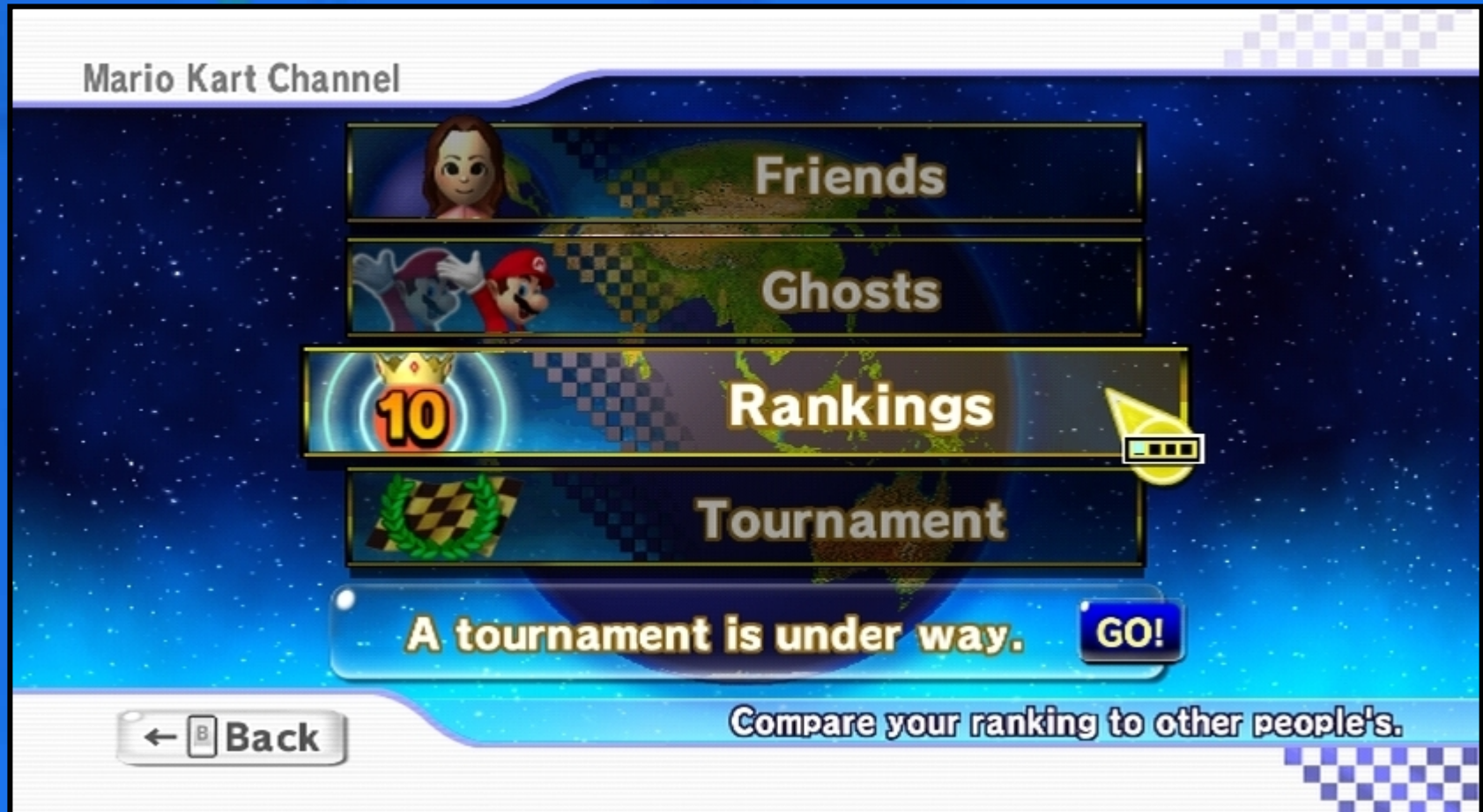# Tournaments

Channel Script

Ghost Race

Channel Script

Mario Kart Channel Options
Lowest button changes dynamically

Ranking Information
Automatic Download

Ranking Information
Message Exchange for Ranking from Wii Friends

Ranking Information
Worldwide Top 10 Data

Ranking Information
Race against World Champion Ghost

Ranking Information
Rival Ghost data

Meta data for Rival Ghost

WiiConnect24

Something New Every Day
Sending Messages
Implementation Example
Download Feature
Download Scheduler
Mario Kart Case Study
Closing Remarks

Wii 2008
SUMMIT

Nintendo

Many things we didn't talk about

- Restrictions
- Parental Control
- Letterhead templates
- Manage Wii Address Book
- Sending E-Mails to PCs and Mobile Phones
- Tools

Nintendo

Wii SUMMIT 2008

Where to start

- WiiConnect24 Overview
  - For Producers, Game Designers, ...

- WiiConnect24 Programming Manual
  - For Programmers

Wii 2008 SUMMIT

Nintendo

Thanks for your attention

Questions:

Contact support@noa.com

Wii 2008 SUMMIT

Nintendo