

mdSYSTEMS

DRUPAL & ENTWICKLERKOMPETENZ



Drupal 7

Properties

<http://drupal.org/project/properties>

Properties – The Beginning

- Architectural Considerations
 - Collecting Ideas
 - Drupal 7 Features + Possibilities
 - Requirements & Modules
 - Missing Functionalities
-
- HSLU – University of applied Sciences
Term Paper

Properties – Goals

- Enterprise shop
- Simple architecture
- Simple Product management
- Huge Product variety
- Structured data
- High performance

Properties – Team

- **Miro Dietiker**
MD Systems
-

- **Sascha Grossenbacher**
Student HSLU

- **Peter Stöckli**
Student HSLU
-

- **Roland Gisler**
Supervisor HSLU

Warehouse – Example

- Sell various Products
Shirt, Shoes, CDs, Notebook, Mobile, Screens, Food
-

- Optimum Data-Clerk experience
-

- Features of popular shops

Warehouse – Numbers

- 5'000+ Products
- 100 Groups
- 150 Fields
- 30 Varying attributes
- 100 Types

Google – Product Presentation

Google phone gallery

Home ▶ Nexus S

Nexus S with Google



Where to Buy



Nexus S is the next generation of Nexus devices, co-developed by Google and Samsung. The latest Android platform (Gingerbread), paired with a 1 GHz Hummingbird processor and 16GB of memory, makes Nexus S one of the fastest phones on the market. It comes pre-installed with the best of Google apps and enabled with new and popular features like true multi-tasking, Wi-Fi hotspot, Internet Calling, NFC support, and full web browsing. With this device, users will also be the first to receive software upgrades and new Google mobile apps as soon as they become available. For more details, visit <http://www.google.com/nexus>.

More images



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Android

OS Version	Android 2.3
UI	Android

Size and Weight

Dimensions	63.0 mm (w) 123.9 mm (h) 10.88 mm (d)
Weight	129.0 grams

Display

Screen size	4.0 inches
Screen resolution	WVGA (800 x 480)
Touch screen	✓

Hardware

CPU	1GHz Cortex A8 (Hummingbird) processor
USB	USB 2.0
Audio / headphone jack	3.5mm
FM Radio	✗
Physical keyboard	✗
Accelerometer	✓

Additional Features

Contour Display, Near Field Communications (NFC), Three-axis gyroscope, Anti-fingerprint display coating, Internet Calling support (VoIP/SIP)

Availability and Networks

Availability	T-Mobile (United States) T-Mobile (United Kingdom) Vodafone (United Kingdom) Orange (United Kingdom) 3 (United Kingdom) O2 (United Kingdom)
Buy From	Best Buy (United States) The Carphone Warehouse (United Kingdom)

Battery

Type	Lithium Ion (Li-Ion) (1500 mAh)
Talk time	6 hours
Standby time (max)	428 hours

Storage and Memory

RAM	512MB
Internal storage	16384MB

Connectivity

Network support	Quad-band GSM: 850, 900, 1800, 1900 Tri-band HSPA: 900, 2100, 1700 HSPA type: HSDPA (7.2Mbps) HSUPA (5.76Mbps)
WiFi	802.11 b/g/n
Bluetooth	Bluetooth 2.1
Infrared	✗
GPS	✓

Google – Product Compare

Google phone gallery

[Home](#) » [Compare Phones](#)

Compare Phones

Side-by-side Comparison



HTC Desire (CDMA)



HTC Desire delivers intense brilliance, sharp contrast, and true colors on the expansive 3.7-inch display.

[Learn more](#)

[Remove from comparison](#)

Nexus One



The Nexus One shows what's possible on mobile devices through Android when cool apps meet a fast, bright, and connected computer that fits in your pocket.

[Learn more](#)

[Remove from comparison](#)

Nexus S



Fast just got faster with Nexus S. A pure Google experience, Nexus S is the first phone to run Gingerbread (Android 2.3), the fastest version of Android yet.

[Learn more](#)

[Remove from comparison](#)

Basic Info

Name	HTC Desire (CDMA) <small>with Google</small>	Nexus One <small>with Google</small>	Nexus S <small>with Google</small>
Operators	US Cellular (United States) Cellular South (United States)	T-Mobile (United States) Vodafone (United Kingdom) Vodafone (Italy) Vodafone (Spain) KT (Korea) Videotron (Canada)	T-Mobile (United States) Vodafone (United Kingdom) Orange (United Kingdom) 3 (United Kingdom) O2 (United Kingdom)
Buy from	Cellular South (United States) US Cellular (United States)	Vodafone (United Kingdom) Vodafone (Spain) Vodafone (Italy) Korea Telecom (Korea) Videotron (Canada)	Best Buy (United States) The Carphone Warehouse (United Kingdom)

Android

OS version	Android 2.1	Android 2.2	Android 2.3
UI	HTC Sense™	Android	Android

Connectivity

Radio	CDMA 1X 800/1900, EVDO rev. A	3 UMTS bands (either 900/AWS/2100 MHz or 850/1900/2100 MHz) HSDPA 7.2 Mbps HSUPA 2 Mbps GSM/EDGE (850, 900, 1800, 1900 MHz)	Quad-band GSM: 850, 900, 1800, 1900 Tri-band HSPA: 900, 2100, 1700 HSPA type: HSDPA (7.2Mbps) HSUPA (5.76Mbps)
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Battery

Type	Lithium Ion (Li-Ion) (1400 mAh)	Lithium Ion (Li-Ion) (1400 mAh)	Lithium Ion (Li-Ion) (1500 mAh)
Talk time	6 hours	10 hours	6 hours
Standby time (max)	360 hours	290 hours	428 hours

Storage and Memory

Removable storage	microSD card (8GB included , max 32GB)	microSD card (4GB included , max 32GB)	None
RAM	384MB	512MB	512MB
Internal storage	512MB	512MB	16384MB

Connectivity

WiFi	802.11 b/g	802.11 b/g	802.11 b/g/n
Bluetooth	Bluetooth 2.1	Bluetooth 2.0	Bluetooth 2.1
Infrared	✕	✕	✕
GPS	✓	✓	✓

Size and Weight

Dimensions	60.0mm x 119.0mm x 11.9mm (w x h x d)	59.8mm x 119.0mm x 11.5mm (w x h x d)	63.0mm x 123.9mm x 10.88mm (w x h x d)
Weight	135.0 grams	130.0 grams	129.0 grams
Screen size	3.7 (inches)	3.7 (inches)	4.0 (inches)
Screen resolution	WVGA (800 x 480)	WVGA (800 x 480)	WVGA (800 x 480)
Touch screen	✓	✓	✓

Hardware

CPU	1 GHz Qualcomm QSD 8250 Snapdragon	1 GHz Qualcomm QSD 8250 Snapdragon	1GHz Cortex A8 (Hummingbird) processor
USB	USB 2.0	USB 2.0	USB 2.0
Audio / headphone jack	3.5mm	3.5mm	3.5mm
FM Radio	✓	✕	✕
Physical keyboard	✕	✕	✕
Accelerometer	✓	✓	✓

Camera

Primary	5.0 megapixels	5.0 megapixels	5.0 megapixels
Features	Flash Video	Flash Video	Flash Video

Additional Features

	Includes HTC widgets: Bookmarks, Calendar, Clock, Footprints, Friend Stream, Mail, Messages, Music, News, People, Photo Album, Photo Frame, Search, Settings, Stocks, Twitter, Weather.	Second microphone for dynamic noise suppression	Contour Display, Near Field Communications (NFC), Three-axis gyroscope, Anti-fingerprint display coating, Internet Calling support (VoIP/SIP)
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Example – Nokia

Nokia E75



Nokia 6700 slide



Nokia N97



• Basisdaten

Touch screen			Ja	
Form	Zum Aufschieben mit vollständiger Tastatur	Zum Aufschieben	Zum Aufschieben mit Kipp-Display	
Grösse	111,8x50x14,4mm bzw. 111,8 x 80 x 14,4 mm (aufgeschoben)	95,2x46,1x15,9mm	117,2 x 55,3 x 15,9 mm (18,25 mm an der breitesten Stelle)	
Gewicht	139 g	110g (inkl. Standard-Akku BL-4CT)	150 g	
Eingabemethode	Telefontastatur, vollständige Tastatur	Telefontastatur	Vollständige Tastatur zum Aufschieben; Touchscreen mit Schiebe-Kipp-Mechanismus	
Displaygrösse	240x320Pixel	240x320Pixel (QVGA)	640 x 360 Pixel	
Displayfarben	16,7 Mio. Farben	16,7Mio. Farben	16,7 Mio. Farben	
Sprechzeit	Bis zu 9 Std. 12 Min. (GSM) Bis zu 4 Std. 12 Min. (UMTS) Bis zu 9 Std. (VoIP über WLAN)	GSM: bis zu 4Std., UMTS: bis zu 3Std.	GSM: bis zu 400 Min. UMTS: bis zu 320 Min.	
Stand-by-Zeit	Up to 280 h (GSM) Up to 270 h (WCDMA) Up to 130 h (WLAN)(maximum):	GSM: bis zu 300Std., UMTS: bis zu 250Std.	GSM: bis zu 430 Std. UMTS: bis zu 400 Std.	
Interner Speicher	50MByte Speicherplatz für Nutzerdaten	60MB Speicherplatz für Nutzerdaten	Bis zu 32 GByte interner Speicher	
Speicherkarten Typ	Hot-Swap-Steckplatz für bis zu 16GByte große microSD-Speicherkarte	Steckplatz für bis zu 16GB grosse microSD-Speicherkarten	Steckplatz für bis zu 16 GByte große microSD-Speicherkarten	
Unterstützte Netze	UMTS-Netzen (WCDMA 900/1900/2100; HSDPA); Quadband-Betrieb in GSM 850/900/1800/1900-Netzen	GSM 850/900/1900/2100-Netze (Quadband), EDGE; UMTS-Netze (WCDMA 850/1900/2100)	UMTS-Netze (WCDMA 900/1900/2100, HSDPA), Quadband-Betrieb in GSM 850/900/1800/1900-Netzen, GPRS, A-GPS, WLAN	
Integrierter Lautsprecher	Ja	Ja	Ja	

• Mitteleidungsdienste und Kommunikation

MMS (Multimedia Messaging Service)	Ja	Ja	Ja	
E-Mail	Ja	Ja	Ja	
Chat	Ja	Ja	Ja	
Videotelefonie	Yes	Ja	Ja	
Push-to-talk	Ja		Ja	

← Seitenanfang

• Kamera

Megapixel	3,2Megapixel	5Megapixel	5 Megapixel	
Bildaufösung	1.536x2.048Pixel	2.592x1.944Pixel (QVGA)	2.584 x 1.938 Pixel	
Zoom	Ja, 8-facher Digitalzoom	8-facher Digitalzoom	14-facher Digitalzoom	
Autofocus	Ja	Ja	Ja	
Blitzlicht	Ja, LED-Blitzlicht	Ja, zwei LED-Blitzlichter	Ja, zwei LED-Blitzlichter	
Video: Frames/Sek.	Bis zu 30Frames/s (VGA) Bis zu 30Frames/s (QVGA) Bis zu 15 Frames/s (QCIF)	Bis zu 30 Frames/s	Bis zu 30 Frames/s	
Videoauflösung	480x640 Pixel (VGA) 240x320 Pixel (QVGA) 144x176 Pixel (QCIF)	QVGA/VGA	VGA	
Aufnahmezeit	1 h	Abhängig vom verfügbaren Speicherplatz	Videoclip-Länge: bis zu 90 Min.	

← Seitenanfang

Example – Digitec

<div> <div>digitec.ch</div> <div>      </div> </div>					
» zum Shop	» Detailsansicht	» Detailsansicht	» Detailsansicht	» Detailsansicht	» Detailsansicht
	» In den Warenkorb	» In den Warenkorb	» In den Warenkorb	» In den Warenkorb	» In den Warenkorb
Preis	499.-	499.-	383.-	1541.-	2799.-
Bezeichnung	Lenovo IdeaPad S10-3T Tablet, 10.1" WSVGA Touch, Atom N455	Dell Inspiron 15, Intel Celeron 900, 15.6" HD, 3GB, 320GB	Asus EeePC 1015PEM, Atom N550, 10" WSVGA, Schwarz	Toshiba Tecra S11-14M, i5 560M, 15.6" WSXGA, nVidia NVS	Apple MacBook Pro 17", i7 2.66GHz, 500GB, Aluminium Unibody
Artikel-Nr.	203716	203882	201607	207237	188070
Product Number	M2488MZ	N5030-7002	1015PEM - BLK0555	PTSE3E-09R04LS4, S11-14M	Z0CP
Description	Tablet-PC im Miniaturformat mit hochentwickelten Features	Das Inspiron 15 ist ein 15.6" (40 cm) - Notebook, das Ihnen alle Funktionen bietet, die Sie im Alltag benötigen, zu einem unschlagbar günstigen Preis	Dieses kompakte und sehr leichte Netbook verfügt über einen 2-Kern Atom Prozessor, einen reflektionsarmen Bildschirm und kommt im beliebten "Seashell-Design" daher. Darüber hinaus trumpft dieses Netbook mit über 10 Stunden Batterielaufzeit auf! Auch erhältlich in weiss	Zuverlässige Performance für den mobilen Einsatz: Der Tecra S11 ist ein leistungsfähiges Desktop-Replacement-Notebook mit umfassender Multimedia-Ausstattung und hoher Grafikperformance für anspruchsvolle Anwendungen	
Processor	Intel Atom N455 (1.6GHz), 512KB Cache	Intel Celeron 900 (2.2GHz), 1MB Cache, 800MHz FSB	Intel Atom N550 (1.5GHz), Dual Core (4 Threads), 8.5W TDP	Intel Core i5 560 (2.66GHz), 3MB Cache, 1066MHz FSB	Intel Core i7 (2.66GHz)
Chipset	Intel NM10 Express	Intel GM45		Intel HM55 Express	
Display	10.1" Multi-Touch Display, dreh und schwenkbar, berührungssensitiv (Lenovo NaturalTouch)	15.6" LCD, Glare Type, LED Backlight	10.1" TFT, entspiegelt, LED Backlight	15.6" TFT, entspiegelt, LED Backlight	17" TFT, mit LED-Backlight, Glare Type
Resolution	WSVGA (1024 x 600)	WXGA HD (1366 x 768)	WSVGA (1024 x 600)	WSXGA (1600 x 900)	WUXGA (1920 x 1200)
Random Access Memory RAM	2GB DDR3, 667MHz	3GB DDR2 (1x 1024MB + 1x 2048MB), 800MHz, 2 Slots vorhanden	1GB DDR3 (1x 1024MB), 1 Steckplatz, maximal 2GB	4GB DDR3 (2x 2048MB), 1066MHz, Maximal 2x 4GB	2x 2048MB DDR3-1066, maximal 2x 4GB
Hard disks	320GB, 5400rpm	320GB, 5-ATA, 5400rpm	250GB, 5400rpm + 500GB gratis Online-Storage	320GB 5-ATA, 7200rpm	500GB 5-ATA, 5400rpm
Graphic-Adapter	integrierte Intel GMA 3150 (shared)	Intel Graphics Media Accelerator 4500MHD (shared)	Intel GMA 3150 (shared)	nVidia Quadro NVS 2100M mit 512MB (dediziert)	nVidia GeForce 330M mit 512MB (dediziert)
Optical Drive	kein optisches Laufwerk	DVD+/-RW Laufwerk	kein optisches Laufwerk	DVD Super Multi (Double Layer) Brenner	8x SuperDrive DVD-Brenner
Network	Wireless LAN 802.11b/g, 10/100 Mbit/s Ethernet, Bluetooth 2.1	802.11b/g WLAN, 10/100 LAN	Wireless LAN 802.11b/g/n, 10/100 LAN, Bluetooth 3.0	Gigabit LAN, WLAN 802.11a/g/n, Modem, Bluetooth	Airport Extreme (802.11n), Gigabit LAN, Bluetooth 2.1
Sound	Integrierte Stereolautsprecher, Dolby Headphone Zertifikat, digitales Einzelmikrofon mit Array-Technik	Intel High Definition Audio 2.0 und SRS	HD Audio mit integrierten Stereolautsprechern	64-Bit Audio, integrierte Stereolautsprecher	onboard mit Stereo Speakers
Connections	3x USB 2.0, VGA, Audio, RJ-45	3x USB 2.0, VGA, Audio, RJ-45	3x USB 2.0, VGA, Audio Ein-/Ausgang, RJ-45	4x USB (1x geteilt mit e-SATA), VGA, Serielle, RJ-45, Mini DisplayPort, Microphone, Line-Out, ExpressCard Slot, Anschluss zu Toshiba Express Port Replicator 2 (optional)	2x USB 2.0, FireWire 800, Audio, Mini DisplayPort, ExpressCard /34
Card Reader	6-in-1 Cardreader	7-in-1 Cardreader (SD, SDHC, SDHD, MMC, MS MS Pro, xD)	MMC, SD, SDHC	Multi-Card Leser (für SD Cards bis zu 16 GB, Memory Stick bis zu 256 MB, Memory Stick Pro bis zu 4 GB, MultiMedia Card bis zu 2 GB und xD-Picture Card bis zu 2 GB)	

Keyboard Layout	SWISS (QWERTZ)	SWISS (QWERTZ)	SWISS (QWERTZ)	SWISS (QWERTZ)	Mac OS X 10.6 Snow Leopard
Operating System	Windows 7 Home Premium 32-Bit D/F/I/E	Windows 7 Home Premium 64-bit D/F/I/E	Windows 7 Starter D/F/I/E	Windows 7 Professional 64-bit D/F/I/E	iLife (umfasst iTunes, iPhoto, iMovie, iDVD, iWeb, GarageBand)
Software		Microsoft Office 2010 Starter, McAfee Security Centre (6 Monate)	Microsoft Office 2010 Starter	Microsoft Office 2010 Starter	
Accumulator	Li-Ionen Akku, 4-Zellen	Lithium-Ionen Akku, 4 Zellen, 28Wh	Lithium-Ionen, 6 Zellen, 5200mAh, Laufzeit bis zu 10.5h	Lithium-Ion, Laufzeit bis zu 3.5h	Li-Polymer Akku, 95Whr
Dimensions	28 x 17.4 x 1.5 - 2cm	37.4 x 24.4 x 2.6 - 3.8cm	26.2 x 17.8 x 2.4-3.6cm	37.4 x 25.1 x 3.3 - 3.8cm	39.3 x 26.7 x 2.5cm
Weight	1.5kg	2.64kg	1.27kg	2.6kg	2.99kg
Package Contents					
Security			Kensington-Lock Vorrichtung	Fingerprint Reader, Tastatursperre	
Note	Deckel Cosmic Night / innen weiss	Farbe = 3D Black (Schwarz mit dezementem weissen Muster)	Matte Oberfläche		
Bundle Information					
Monthly fee					
IdentLog					
Garantie					
Bewertung	☆☆☆☆☆	★★★★★	☆☆☆☆☆	☆☆☆☆☆	★★★★★
Vermerk	Offer	Offer	Offer	New	Offer
Verfügbarkeit	<div>Postversand</div> <div>>10 Stück versandbereit</div> <div>Zürich</div> <div>1 Stück abholbereit</div> <div>Winterthur</div> <div>Etwa ab morgen 3:45 PM Uhr abholbereit bei Bestellung bis morgen 11:15 AM Uhr (ohne Gewähr).</div> <div>Dietikon</div> <div>Etwa ab morgen 1:45 PM Uhr abholbereit bei Bestellung bis morgen 9:15 AM Uhr (ohne Gewähr).</div> <div>Wohlen</div> <div>>10 Stück abholbereit</div> <div>Kriens</div> <div>2 Stück abholbereit</div> <div>Für weitere Informationen klicken Sie bitte auf den Balken.</div>	<div>Postversand</div> <div>>10 Stück versandbereit</div> <div>Zürich</div> <div>2 Stück abholbereit</div> <div>Winterthur</div> <div>2 Stück abholbereit</div> <div>Dietikon</div> <div>1 Stück abholbereit</div> <div>Wohlen</div> <div>>10 Stück abholbereit</div> <div>Kriens</div> <div>2 Stück abholbereit</div> <div>Für weitere Informationen klicken Sie bitte auf den Balken.</div>	<div>Lieferzeit</div> <div>03.02.2011 (ohne Gewähr) (>10 Stück beim Lieferanten bestellt)</div> <div>Für weitere Informationen klicken Sie bitte auf den Balken.</div>	<div>Lieferzeit</div> <div>ca. 2-4 Tage bei Bestellung heute (ohne Gewähr) (1 Stück beim Lieferant an Lager. Nicht bei digitec an Lager)</div> <div>Für weitere Informationen klicken Sie bitte auf den Balken.</div>	<div>Lieferzeit</div> <div>ca. Mitte Februar (ohne Gewähr)</div> <div>Für weitere Informationen klicken Sie bitte auf den Balken.</div>

Drupal 7 – Core

- Entities Node
 - Bundles Node Type
 - Fields Field Definition
 - Field Instance Field@Nodetype
-

- Widget + Formatter
- View Mode
- APIs...

Entities & Fields

- Designing E&F
 - Is architectural work
 - Needs in-depth knowledge
 - Needs super-admin power
 - Does cache clearing
- Redesigning
 - Needs data migration
 - Results in data loss

Drupal Commerce

- Product + Price
- Cart
- Shipping
- Stock
- Invoice
- ...

Wrong Approach

- Node Content Types + Fields
- 7.5MB Registry
(2.2KiB per Field Instance * 3500)
- Cluttered UI
- Administrator-Centric
- Heavy setup, no scaling

The Data-Clerk Problem

- Content Master
Non-Administrator
- Administrator please!
 - New product types
 - New attributes
- Cluttered UI
- Bad usability

The WYSIWYG Problem

- Flexible HTML Tables
- Variable formatting
- No semantic data

The Comparison Problem

- Data Structure needed
- Compare Module
- Compareability

Other Modules?

- Fields
- Field collection?
http://drupal.org/project/field_collection
- DataField?
<http://drupal.org/project/tablefield>
- External ERP data?
- Any?

Properties – Technically

- Is a categorized Key=>Value store
- Defines a new fieldtype
- Could be attached to any entity
- Provides an API & UI
- Storing Any number of Key->Value
- Using categories
- Contains a comparison module

Properties – Widget

PROPERTIES
Add properties to this content. Start by adding categories to it.

[Show row weights](#)

ATTRIBUTE NAME	ATTRIBUTE LABEL	VALUE	CATEGORY	DELETE
+ Camera				<button>Delete</button>
+ camera_resolution	Resolution	5 Megapixel (2592 x 1944 Pixel)	Camera	<button>Delete</button>
+ camera_features	Features	720p Video, Autofokus	Camera	<button>Delete</button>
+ camera_second	2nd Camera	No	Camera	<button>Delete</button>
+ Screen				<button>Delete</button>
+ screen_width	Width	480	Screen	<button>Delete</button>
+ screen_height	Height	800	Screen	<button>Delete</button>
+ screen_type	Type	Super-LCD	Screen	<button>Delete</button>

Add category Camera Add attribute [Export as template](#)

Properties – Introduction

- Entity Field(s)
- Properties
 - Category
 - Key
 - Value
- Flexible & Efficient UI

When is it needed?


- When non-administrators should manage attribute definition
- When adding varying field data to products
- When light field architecture needed

Architectural Simplification

- Few Fields
 - Properties
Structured data
 - Lightweight Drupal
 - High scalability
-

- Building block

Properties – Demo!

 ExampleShop

HomeProducts

Home

User login

Username *

Password *

- Create new account
- Request new password


Log in

Switch user

- Administrator
- Clerk
- Chief
- Customer

Enter username

HTC Desire



The super android smartphone


Add to compare list

HTC Desire HD

This is the new leading mobile phone company.

Add to compare list

Samsung I9000 Galaxy S



Android Phone with AMOLED Screen


Add to compare list

Nokia 96000

Amazing mobile phone from the popular source.

Add to compare list

Corsair Force F120 SSD



For maximum performance for the ultimate system.

Add to compare list

Properties – Summary

- We can cope!
- Enterprise / Warehouse level
- It's Simple
- Clean UI
High usability
- High flexibility
- New features
Permissions, Data Table, Compare

Properties – State

- Working Module
 - Feedback
-

- Introduction / Production
 - Join the initiative
-

- Plan next iteration

Properties – Next Steps

- Architectural experience
- Real world demands
- Develop extensions
- Multilanguage, Definitions, Property-Types, Validation, Formatter, User Interface, Views, Search, Facets, Comparision, Connector, Commerce Attributes

Thank You

Miro Dietiker

miro.dietiker@md-systems.ch

Sascha Grossenbacher

Peter Stöckli

MD Systems

Räffelstrasse 25

CH - 8045 Zürich