

# SE – Lab2 SS24

Cash register system

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# DIRs

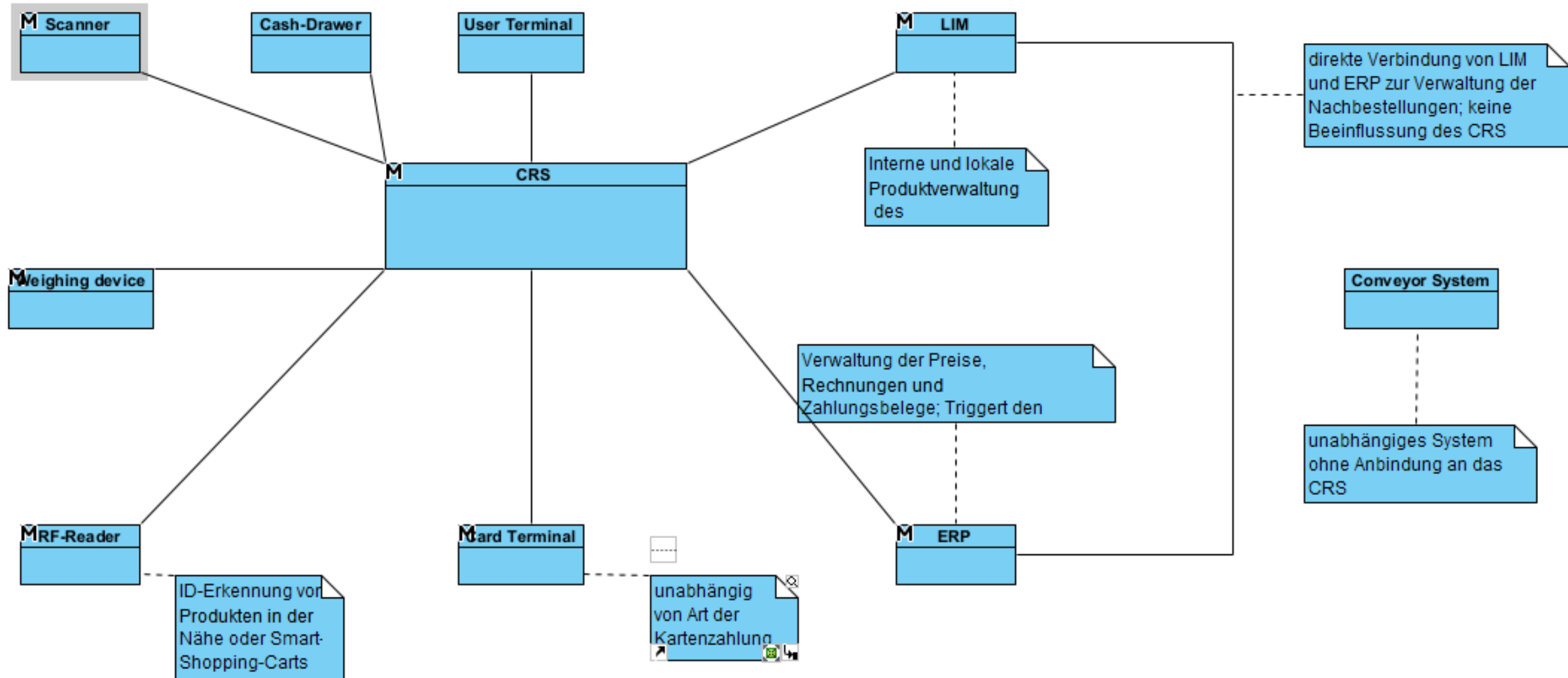
## System Interfaces

Tag	Prio	Attribute	Target Description	Verification Method (how to be measured)
IF1a1	1	Scanner-IF, codes	EAN-Coding (EAN-8, EAN-13, EAN-128), variable parameter/configurable	By inspection, if 100 items detected and transferred to the cash register system correctly.
IF1a2	1	Scanner-IF, data transfer	ASCII-string, variable parameter/configurable	With IF1a1.
IF2				<i>Conveyor system is considered an independent system</i>
IF7a	1	Card Terminal, protocol	RS232, configurable	With IF7b.
IF7b	1	Card Terminal, payment transaction	Payment transaction process triggered by command. Result delivered by synchronous return value. Possible values: “successfully processed payment”, “payment process cancelled”. Transfer information about cancellation cause as character string. At least 10€.	Emulate Debit Card Terminal. Check payment processes: 1. Payment process successful, 2. Timeout, 3. Abort process because PIN-code is incorrect (only if PIN-code used), 4. Abort process because debit card is invalid/not legible, 5. Abort process because account balance is insufficient.
IF7c	1	Card Terminal, setup	Configuration of Debit Card Terminal through parameter file from cash register system	By inspection if Debit Card Terminal reinitializes at transfer of parameter file from cash register system.
IF8				<i>Credit and debit cards are processed as a single system.</i>

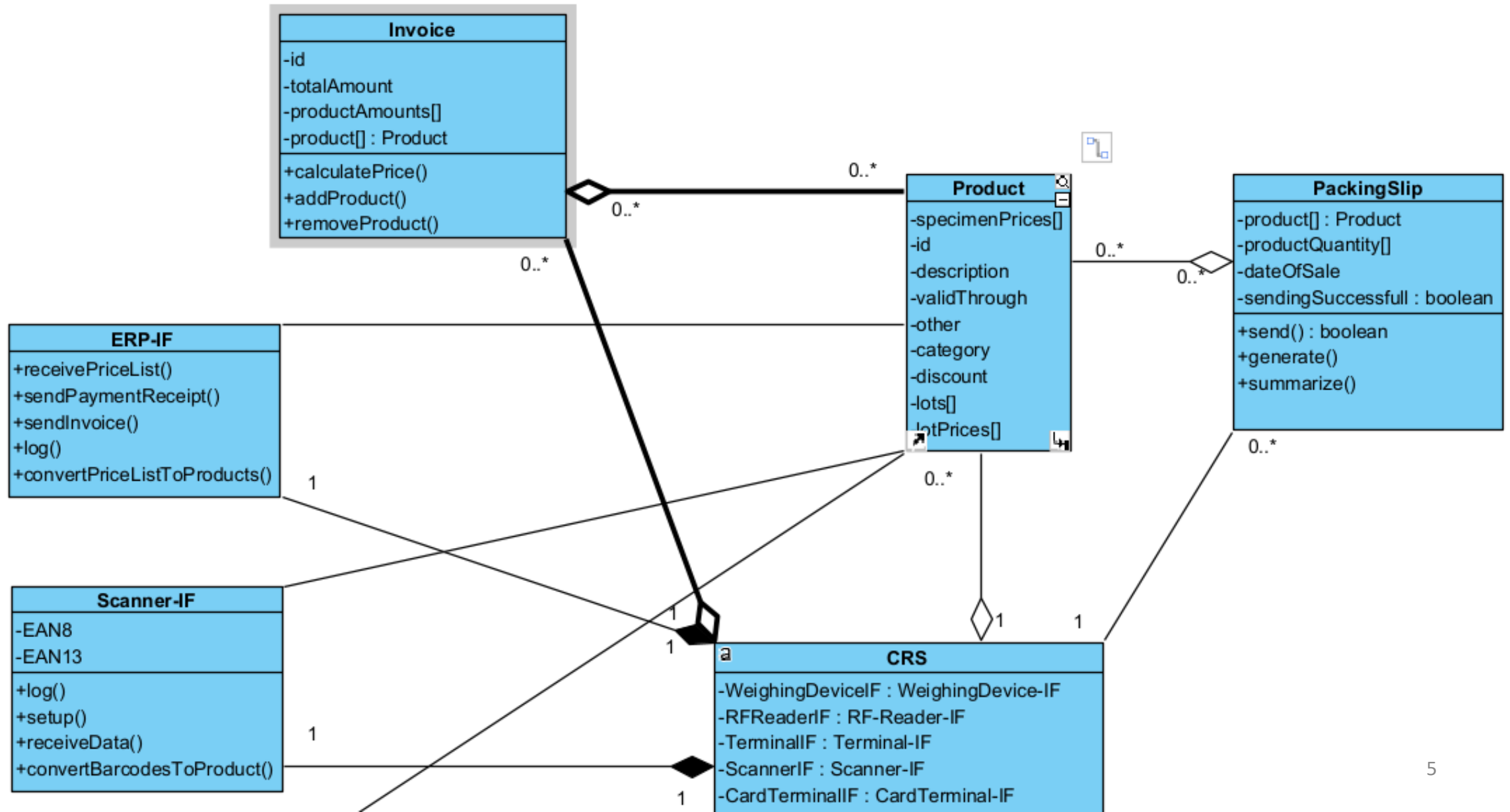
## System Function

Tag	Prio	Attribute	Target Description	Verification Method (how to be measured)
F5b	1	Card payment, cash payout	At sales over 10€, a customer can withdraw up to 100€ in cash, when paying by debit card. The customer’s checking account will be debited with the total sum of sales and cash withdrawal.	By inspection, if cash withdrawal up to 100€ is processable and if customer’s checking account is debited with correct total sum. Verify by emulating cashless payment process.

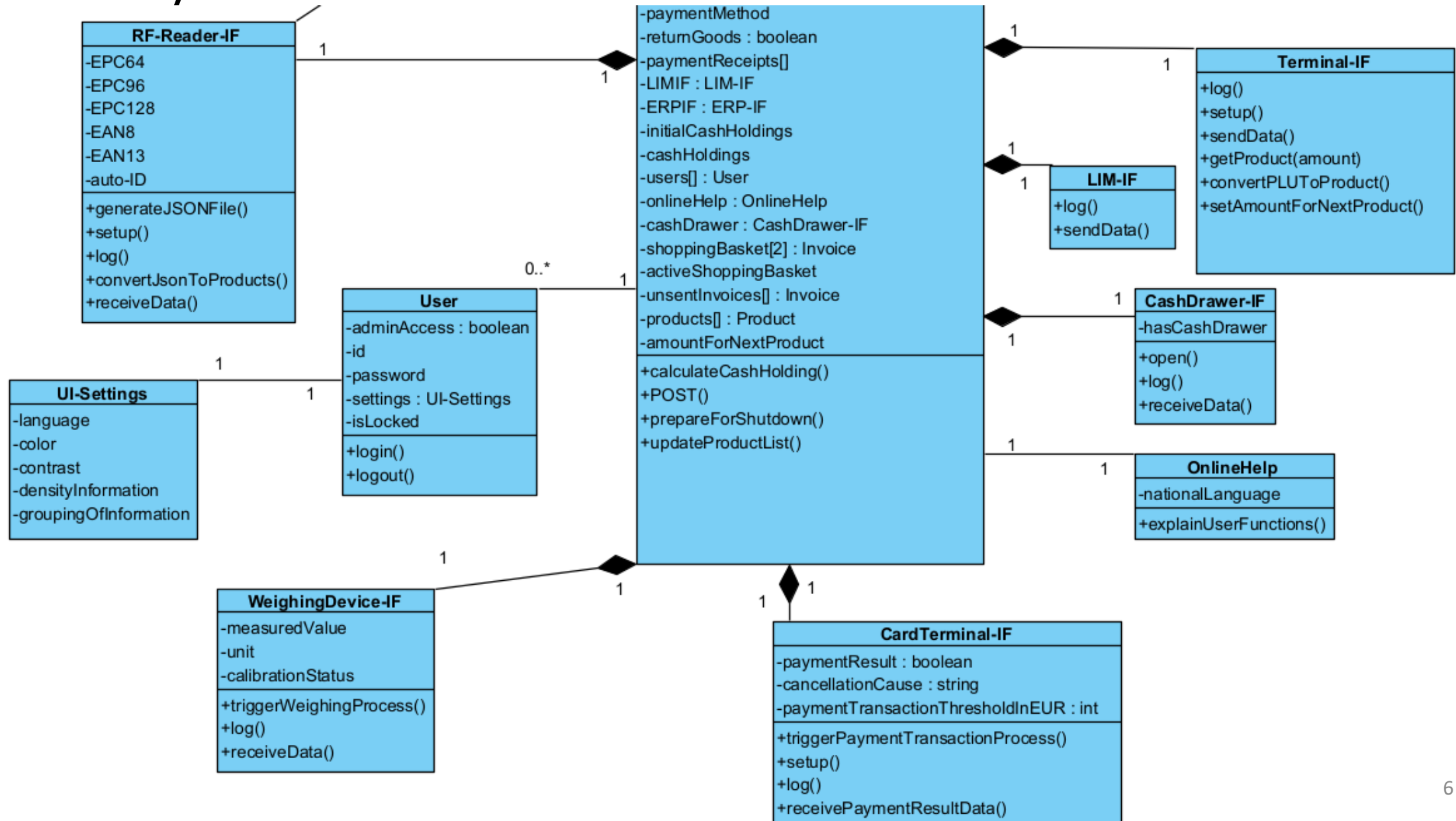
# Context Model



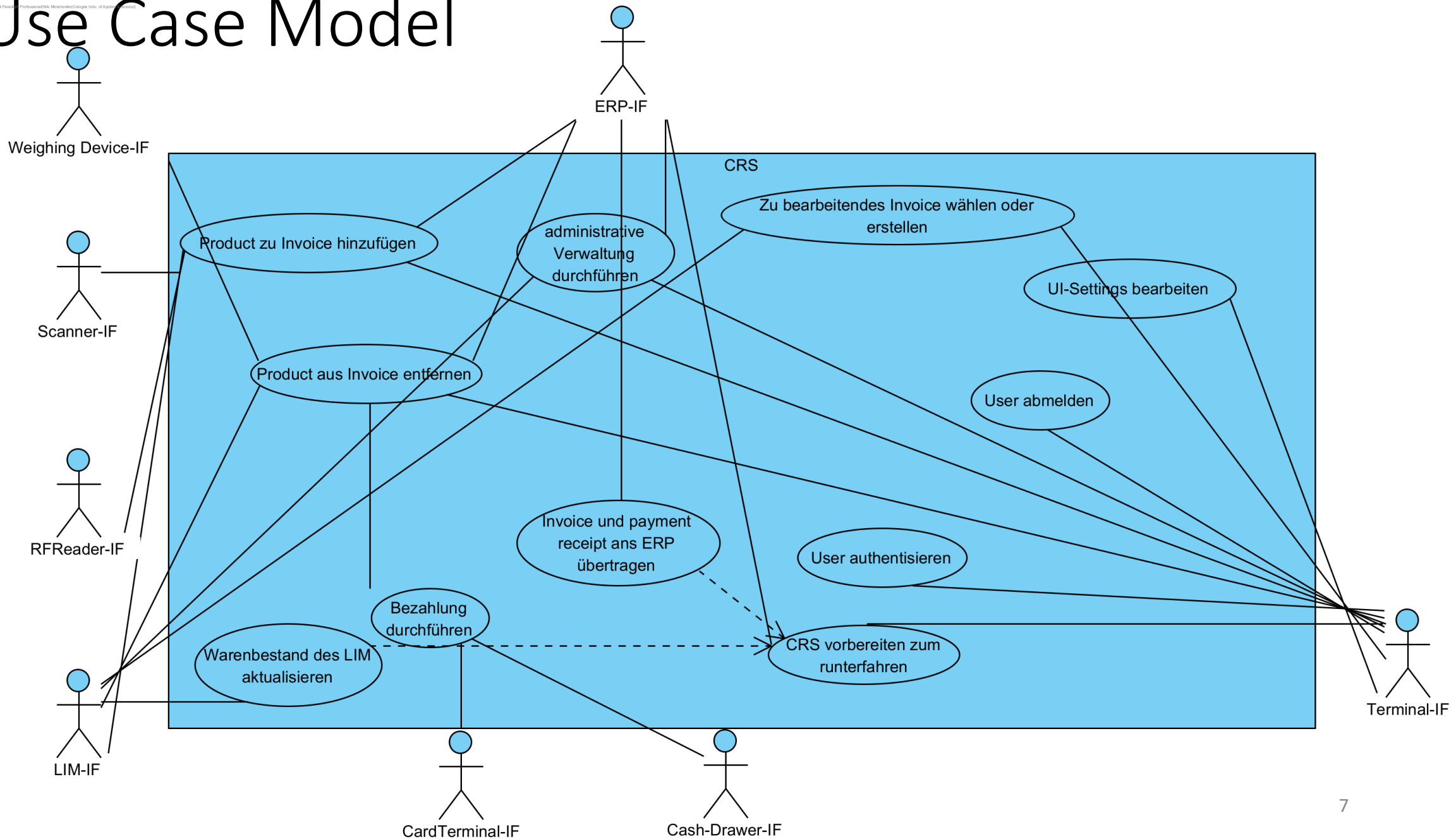
# Entity Model



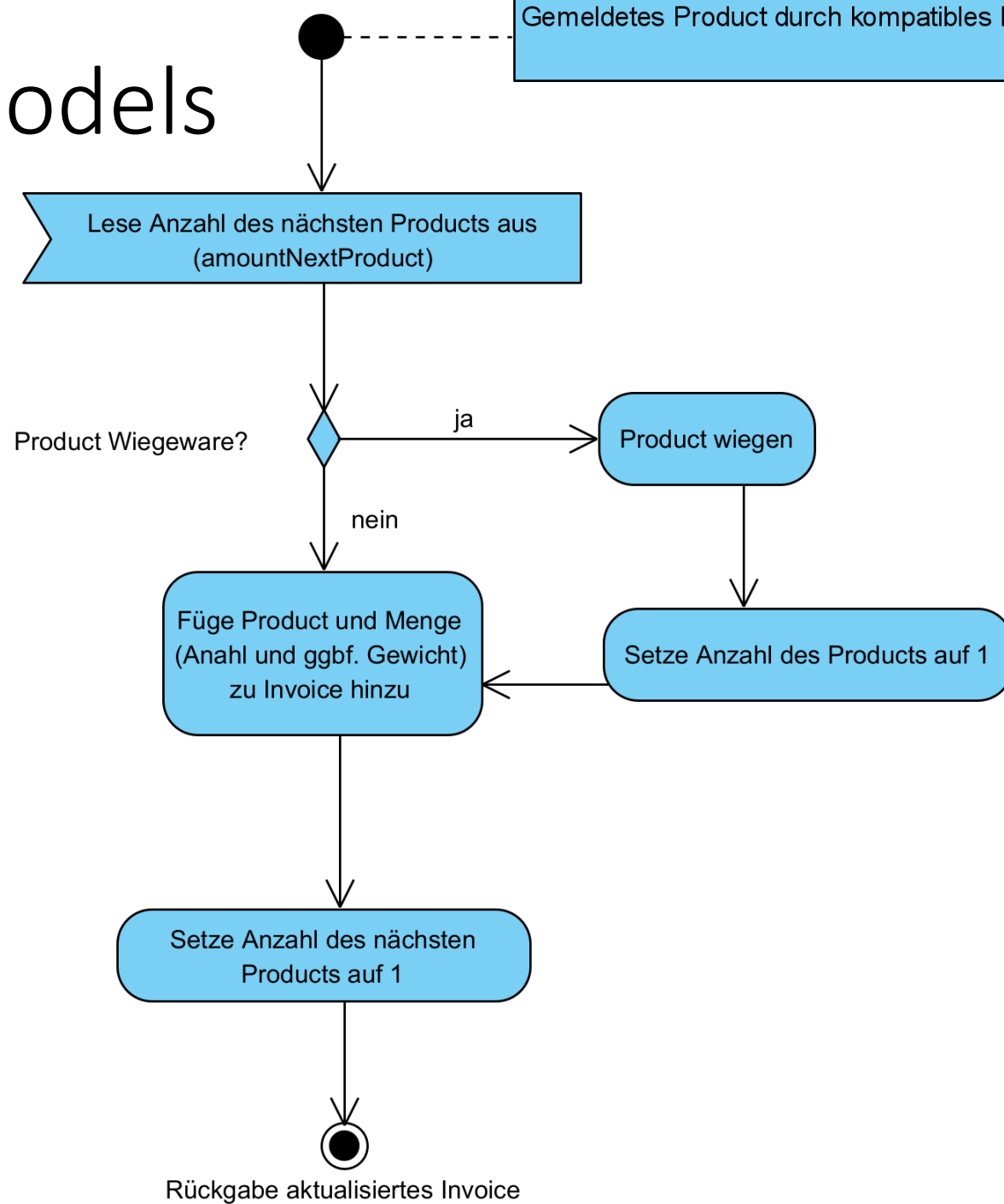
# Entity Model



# Use Case Model

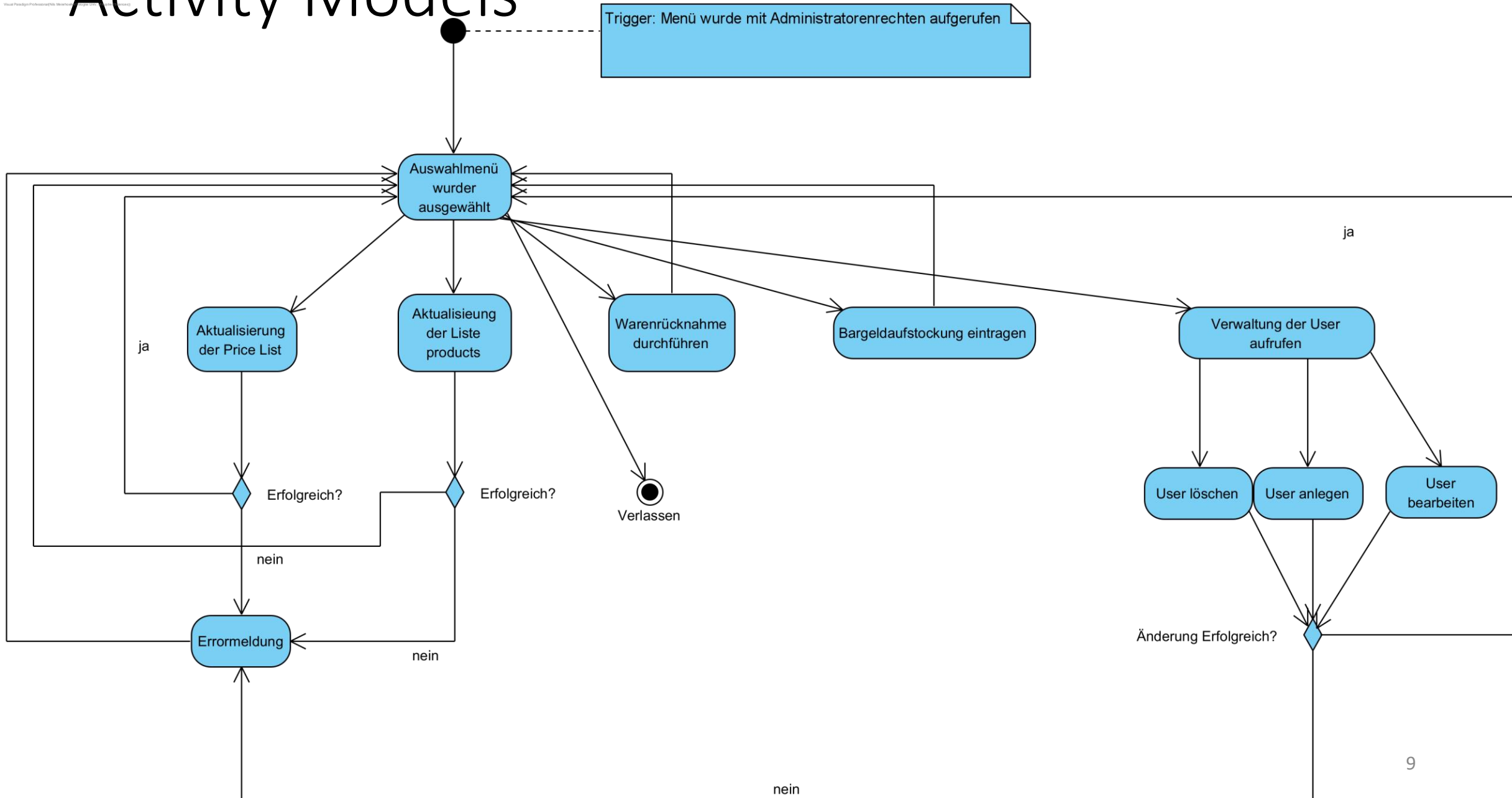


# Activity Models



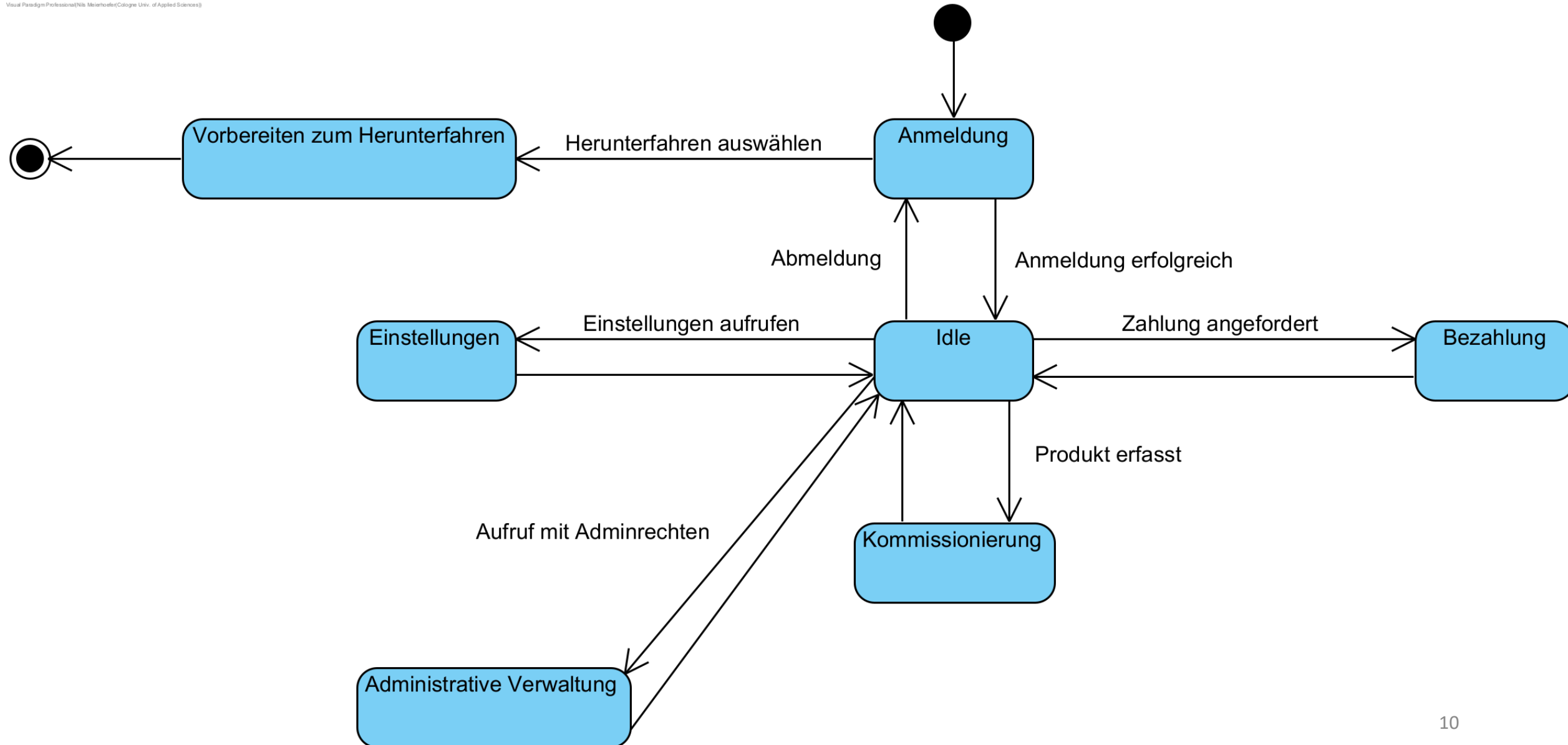


# Activity Models



# State Diagrams

Visual Paradigm Professional (Nik Meierhofer (Cologne Univ. of Applied Sciences))



# Sound concept of system software architecture

- Betriebssystem (Windows oder GNU/Linux)
- Objektorientierte Programmierung mit C++
- Erwartung: Firmware für Schnittstellen inkl. libraries für C/C++
- Hohe Kompatibilität mit verschiedenster Hardware

# Fazit & Probleme

- Umfang bestimmen und eingrenzen
- Effizient Lösungen in der Gruppe finden
- Verbindungen im Entitätendiagramm